

County Borough



of Wolverhampton.

---

# REPORT

UPON THE

## HEALTH OF WOLVERHAMPTON,

FOR THE YEAR 1898,


BY

HENRY MALET, B.A., M.D., B.Ch.,

MEDICAL OFFICER OF HEALTH.

---

PRINTED BY ORDER OF THE HEALTH COMMITTEE.



Digitized by the Internet Archive  
in 2018 with funding from  
Wellcome Library

<https://archive.org/details/b30289282>

# MEDICAL OFFICER'S REPORT,

## 1898.

### PREVALENCE AND PREVENTION OF INFECTIOUS DISEASE.

Table 2 gives the weekly numbers of cases of certain diseases certified by Medical Men under the Infectious Diseases Notification Act. The crosses represent the degree to which the disease heading those columns prevailed—these are only rough approximations. Any certificate detected as erroneous before the close of the week is not entered.

Table 1 gives the total number of cases about which enquiries were made and which were recorded; no erroneous cases are entered in this Table.

*Small-Pox.*—No case has been reported during the year.

*Measles.*—The Quarterly cases of, and deaths from, Measles since 1884 are as follows:—

	1884	1885	1886	1887
Cases	272, 710, 143, 2;	4, 2,...,17; 21, 9, 189, 959;	124, 17, 31, 22;	
Deaths	11, 66, 20, 1;	1, .....,; .., .., 8, 103;	19, 4, 7, 1;	
	1888	1889	1890	1891
Cases	119, 149, 166, 435;	150, 228, 78, 141;	68, 45, 139, 230;	73, 4, 11, 275;
Deaths	9, 6, 5, 19;	10, 11, 11, 8;	3, 10, 5, 14;	5,..., .., 20;
	1892	1893	1894	
Cases	501, 415, 82, 33;	21, 18, 106, 248;	530, 294, 15, 4;	
Deaths	21, 16, 3, 1;	6, .., 5, 10;	46, 27, .., ..;	
	1895	1896	1897	1898
Cases	2, 83, 215, 549;	159, 69, 36, 45;	83, 218, 249, 400;	98, 64, 19, 3.
Deaths	.., .., 7, 33;	6, .., 1, 1;	3, 11, 16, 19;	4, 10, 5, ..

The numbers of cases of Measles reported are only rough approximations to those actually occurring; there is no definite system of reporting this disease; probably the numbers of deaths give almost as accurate an idea of the actual prevalence. The only control exercised over Measles is that of prohibiting the attendance at school of children from infected houses; and occasionally the closure of a school. The last measure has not been adopted during the year. During the First Quarter there was a partial epidemic, limited in extent to the North West district of the Borough, and with a very low fatality. It apparently invaded that area from Tettenhall. During the next Quarter there was a very mild but more widely spread prevalence; but about May the cases became much less, and from thence to the close of the year we were apparently nearly free from Measles.

*Scarlet Fever.*—We began recording our cases in 1884, but as we have only had notification since 1890 (inclusive) the returns before that year are probably less complete than those since. The death records in my possession go back to 1870; the following are the deaths since that year, and the known cases since 1884:—

	1870	1871	1872	1873	1874	1875	1876
Deaths	54,	26,	69,	121,	34,	26,	58.
	1877	1878	1879	1880	1881	1882	1883
Deaths	226,	40,	17,	39,	64,	27,	24.
	1884	1885	1886	1887	1888	1889	1890
Deaths	37,	46,	5,	16,	17,	6,	13.
Cases	212,	244,	47,	168,	194,	124,	500.
	1891	1892	1893	1894	1895	1896	1897
Deaths	14,	3,	25,	55,	34,	21,	24.
Cases	419,	242,	623,	1096,	592,	372,	529.
	1898						
Deaths	20.						
Cases	359.						

The fatality varies in different periods, so that the deaths bear little ratio to the cases; as a rule with increased prevalence there is increased fatality, so that the higher death returns do not mean quite a proportionate increase in cases.



The following Table gives Quarterly particulars as to the cases in the two Sub-Districts. None of the cases in the General Hospital were sent in by us. The deaths are those of the cases reported in each Quarter, and sometimes occur later: they therefore do not correspond to the deaths in the Mortality Tables, which are those registered in each Quarter:—

QUARTERS.			1st	2nd	3rd	4th	Year
EAST ...	Total ...	Cases ...	31	51	20	22	124
		Deaths ...	1	4	...	...	5
	Borough Hospital	Cases ...	21	44	17	18	100
		Deaths ...	1	4	...	...	5
	General Hospital	Cases ...	8	2	...	2	12
		Deaths ...	...	...	...	...	...
	At Home	Cases ...	2	5	3	2	12
		Deaths ...	...	...	...	...	...
WEST ...	Total ...	Cases ...	51 <sup>a</sup>	52 <sup>a</sup>	53	79	235
		Deaths ...	4	1	2	5	12
	Borough Hospital	Cases ...	29	41	45	59	174
		Deaths ...	2	1	2	5	10
	General Hospital	Cases ...	2	...	...	...	2
		Deaths ...	...	...	...	...	...
	At Home	Cases ...	19	10	8	20	57
		Deaths ...	2	...	...	...	2

<sup>a</sup>.—One was in a Public Institution and kept there.

On account of the larger size of many of the houses in the West a greater number of cases in this Sub-District have fair facility for home isolation ; hence the greater proportion of cases so treated there. The following table gives the proportion of cases kept at home in the Sub-Districts since 1884. I give the total deaths also, because the cases were imperfectly reported before 1890 :—

	EAST.			WEST.		
	Total Deaths.	Cases.	Cases at home.	Total Deaths.	Cases.	Cases at home.
1884	28	?	?	9	?	?
1885	37	146	78	9	98	70
1886	2	19	4	3	28	19
1887	5	52	25	11	116	82
1888	5	53	27	12	141	56
1889	0	45	16	5	79	29
1890	5	239	61	8	261	100
1891	7	154	28	7	265	74
1892	2	76	19	1	166	50
1893	17	301	20	8	322	47
1894	39	600	53	16	496	104
1895	16	234	28	18	358	98
1896	10	155	20	11	217	55
1897	11	219	37	15	310	77
1898	5	124	12	15	235	57

For extended comment on this table I must refer you to the 1897 Report, page 7. It shews that, in spite of other great drawbacks, the East Sub-District has, as a rule, a great advantage over the West through its freer use of Hospital isolation.

The generally low prevalence of Scarlet Fever this year is remarkable, since 1894, a year of maximum prevalence, the present is the fourth year during which this Fever has been on the decline.

The following is the summary of the apparent effects of removal and home care on the spread of the infection in the households attacked during the year. No account is taken of houses where there is no susceptible child after the first case attacked; children who have already had Scarlet Fever being counted as insusceptible:—

EAST SUB-DISTRICT.—During the year there were 47 instances in which no second case occurred after the removal to the Hospital of a first case. In these 47 houses there remained 115 children who had not previously had Scarlet Fever.

In 14 instances secondary cases occurred without Hospital removal, there were 18 such cases; they occurred at the following intervals after the previous case was taken ill:—one day, 4 cases; two days, 2 cases; three days, 6 cases; four days, 3 cases; five days, 2 cases; and six days, 1 case.

In most of these Hospital removal was ultimately resorted to, and in eight instances, where 14 susceptible children still remained, there was no further recurrence.

Thus in 55 instances there was no further case after Hospital removal, though 129 children remained in these houses.

In 6 instances further cases occurred *after* Hospital removal; 6 cases so occurring at the following intervals after the removal:—at one, two, and four days, one case each; 2 cases at nine days; and one case after 26 days. The first three were almost certainly infected before removal, and the last was probably independent infection; so that in only two cases can the removal be said to have failed to check further infection.



In these eight houses there still remained 11 children who escaped. So that altogether 140 children escaped infection after Hospital removal.

In the East, cases were treated at home in eleven houses during the year; in six of these there were no other children; in two instances the patient was at once sent into the country; in one instance the only other child was sent away. In only two instances was home isolation carried out, 6 other children being at home, one of these was taken ill 6 days after the preceding case in the house.

WEST SUB-DISTRICT.—There were 73 instances in which one case of Scarlet Fever was removed, and no other occurred. In these 73 houses there remained 162 susceptible children.

In 13 instances secondary cases occurred without Hospital removal; there were 18 such cases; they occurred at the following intervals after the preceding case had been taken ill:—one day, 8 cases; two and three days, 1 case each; four days, 4 cases; seven days, 1 case; eight days, 2 cases; fourteen days, 1 case.

In some of these Hospital removal was ultimately effected; in seven instances there was no recurrence, 13 children escaping.

Thus in 80 houses there was no further case after Hospital removal, though 175 children remained.

In 12 houses further cases occurred *after* Hospital removal, 17 cases occurring at the following intervals after removal:—one day, 4 cases; two days, 3 cases; three, four, five, and seven days, 1 case each; nine days, 2 cases; ten and eleven days, 1 case each; thirty-two days, and fifty-two days, 1 case each. The first 9 of these cases were almost certainly infected before removal, and the last 2 were independent infection, leaving only 6 possibly due to failure of the removal to limit infection.

In these 12 houses, 28 children remained unattacked after final removal, so that altogether 203 children escaped infection after Hospital removal.



In the West cases were treated at home in 51 houses. In 12 the only children were those primarily attacked. In 15 all the other children were sent away. In 2 of these instances one of the children was taken ill, at intervals of 16 and 14 days after being sent away. In 1 case the patient died on the third day of illness. In 23 houses prolonged isolation was attempted, other children (33) being kept at home. In 4 of these secondary cases occurred at intervals of one, fourteen, seventeen, and twenty-eight days after the primary case.

The Summary for the Borough is as follows :—Hospital removal was effected in 153 houses. After the first removals there remained in these houses 363 children. In 135 of these houses there was no recurrence after removal, 304 children escaping. In only 18 houses was there recurrence, 23 further children being attacked. In these 18 houses 36 children still escaped after final Hospital removals. Of the 23 secondary cases 11 occurred within three days of the removal, and were probably infected before. Three occurred more than three weeks after the removal of the primary case, and were probably due to independent infection, leaving only 9 cases possibly due to failure.

Cases were treated at home, with reasonable facility for isolation, in 25 houses, where there were 39 other children besides the primary cases. Secondary cases occurred in 5 of these houses, 5 cases occurring. 1 of these was within three days of the primary attack, and was probably infected before any care was taken. Thus 4 cases were probably due to failure.

The following Tabular Statement shows the results at a glance :—

	Hospital Removal.	Home Isolation.
Total houses ... ..	153	25
Cases recurred in ... ..	18	5
Number of children after primary cases ... ..	363	39
Number subsequently attacked ...	23 or 6·3%	5 or 12·8%
Number possibly due to failure ...	9 or 2·5%	4 or 10·2%
Number of children escaping ...	340 or 93·6%	34 or 87·2%

The following gives the total results for the five years, 1894, 1895, 1896, 1897, and 1898 :—

	Hospital.	Home.
Total houses ... ..	1,378	162
Cases recurred in ... ..	148	69
Number of children after primary cases... ..	3,872	337
Number of these attacked ...	190 or 4·9%	100 or 29·6%
Number possibly due to failure...	87 or 2·2%	71 or 21·0%
Number of children escaping ...	3,682 or 95·1%	237 or 70·3%

I must refer to the comments in the 1895 Report, page 11; the above figures further confirm them.

*Diphtheria*.—The Quarterly cases of, and deaths from, *Diphtheria* in the Borough since 1890 have been :—

	1890.	1891.	1892.	1893.
Cases	11, 3, 4, 5;	8, 8, 6, 11;	1, 7, 4, 4;	7, 5, 12, 11;
Deaths	3, .., .., 1;	1, 2, 1, 1;	.., 3, 1, ..;	.., 1, 1, 3;
	1894.	1895.	1896.	1897.
Cases	11, 16, 33, 22;	34, 78, 56, 140;	108, 101, 87, 64;	73, 72, 75, 91;
Deaths	5, 8, 10, 10;	19, 24, 14, 27;	19, 15, 9, 12;	11, 10, 11, 26;
	1898.			
Cases	61, 25, 64, 52.			
Deaths	19, 5, 11, 8.			

The Annual cases and deaths in the Sub-Districts have been :—

		1890	1891	1892	1893	1894	1895	1896	1897	1898
EAST	{ Cases	11	8	3	14	36	88	114	121	76
	{ Deaths	2	1	2	2	20	29	21	21	18
WEST	{ Cases	12	25	13	21	46	220	246	190	126
	{ Deaths	2	4	2	3	13	55	34	37	25

The cases of *Diphtheria* reported are a very uncertain index of the actual prevalence of the disease; but, considered with the deaths they indicate a steady decline. This has been particularly marked in the West Sub-District where the prevalence is always greatest, and has since 1894 been excessive. The following is a brief summary of the progress in the Sub-Districts during the year :—

EAST.—During the First Quarter the cases fell (from 29 in the preceding) to 18. Two of these were nurses engaged with Diphtheria cases; three cases were in one house; two were cousins, and had been together; eleven were apparently separate cases. During the Second Quarter the cases fell to 10; two were in one house; the mother of another case had been nursing a case of Diphtheria. During the Third Quarter the cases rose to 37, this was only once exceeded (39 cases in the Second Quarter of 1896). In one road, at brief intervals, there were three cases at No. 56, one case at No. 55, and two cases at No. 53; all of the same surname. There were three cases in another house, and a case a few doors off. In one small court there were three cases in one house and two in another. There were two cases in another house. Twenty cases were apparently separate. In the Fourth Quarter the numbers were down to 11, the exceptional prevalence having apparently quite ceased.

WEST.—In the First Quarter the cases declined (from 62 in the preceding) to 43. Three were in one house, and there were two each in three houses; 34 cases appeared to be separate. The mortality (14 deaths) was very heavy. In the Second Quarter the cases fell to 15, only 2 deaths. Of the 15 cases, only two were in one house. In the Third Quarter the cases only rose to 27, actually 10 less than the East: of these three were in one house; and two each in four houses. The cases rose to 41 in the Fourth Quarter (having fallen to 11 in the East), only five of these 41 cases were fatal, and three of the 11 were fatal. I doubt if these returns are at all accurate. There were five cases in one house (2 fatal), four in another, three in another, and two each in two other houses.

The number of cases where direct infection appears evident suggests strongly that much good could be done by Hospital isolation; and this would undoubtedly be so if actual cases were reported early enough, and if we could rely with more confidence on all those that are reported. But in point of fact we seldom hear of cases until too late to prevent extension; and there is of course considerable doubt about the diagnosis of many possible cases of Diphtheria. I regret



to say the facility for bacteriological confirmation of the diagnosis has been but little utilized, only very few medical men availing themselves of it. Since adopting it in June about 120 cases of Diphtheria have been reported, during this time only 21 specimens have been sent for examination, 11 of these were from the General Hospital, 2 of these were second examinations, of the 9 primary, Diphtheria bacilli were found in 3, not in 6. The other 10 specimens were sent by 5 doctors; in three of them bacilli were found, in 7 not. Thus only 19 patients were examined, 9 being from the Hospital.

It is worth noting that the Quarterly Rainfall during the year was, 3.44 inches, very low; 7.34 inches, fairly high; 3.22 inches, very low; and 6.16 inches, moderate:—the Diphtheria returns were 61, 25, 64, and 52; being in a striking degree in an inverse ratio to the Rainfall.

*Typhoid Fever.*—The cases and deaths for the last nine years are—

		1890	1891	1892	1893	1894	1895	1896	1897	1898
EAST	{ Cases	22	34	22	53	27	78	89	51	76
	{ Deaths	6	5	6	7	10	10	24	9	13
WEST	{ Cases	22	64	53	83	54	56	49	45	41
	{ Deaths	3	11	9	16	7	8	13	12	7
BOROUGH	{ Cases	44	98	75	136	81	134	138	96	117
	{ Deaths	9	16	15	23	17	18	37	21	20

These returns are really moderate for a district like ours, but the mortality is high, that in the East very high; probably there are many cases overlooked. During the first three Quarters the prevalence was remarkably low, there was a slight increase in the last Quarter, especially in the East. Of the total cases 3 came here ill; 2 used water from wells which were subsequently condemned by the Borough Analyst. One case was a nurse in care of Typhoid Fever cases, one case was a mother nursing her son with Typhoid Fever. There were 4 cases in one house, 3 in another, and in six other houses there were 2 cases each. There was no factor found common to any number of cases.

*Whooping Cough.*—Although the fatality from Whooping Cough has been quite remarkably low there was a wide-spread epidemic in the West Sub-District during the Fourth Quarter.

*Influenza*.—There was a moderate epidemic of Influenza during the First Quarter, mainly affecting the West, where 17 deaths were registered as due to it; the East return being only 6. The disease continued slightly prevalent in the West during the Second Quarter; and after that almost disappeared.

*Diarrhœa*.—We have most unfortunately had a very severe epidemic of Diarrhœa, only second in fatality to last year's epidemic. Our Diarrhœa fatality has been very high for the last four years; before which severe epidemics only occurred about every two years. The Annual deaths returned as due to Diarrhœa since 1875 have been:

1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886
96	105	59	93	48	111	46	87	56	140	50	149
1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898
105	60	84	68	105	55	161	62	135	131	188	174

The only previous exceptions to the alternation of heavy and light annual fatalities were two, 1875-6, 1886-7.

Inasmuch as deaths from the same disease are also registered under several other terms (especially Enteritis, or Gastro-enteric Catarrh) the Diarrhœa returns by themselves do not give an accurate idea of the prevalence of this epidemic. In Table No. 4 all such deaths are classified together under the heading Diarrhœal Diseases, and this return is the most instructive to consider. It has been fairly well established that the prevalence of Diarrhœal Disease is in proportion to the temperature, and especially to the ground temperature. The following Table gives our weekly deaths from Diarrhœal Diseases during twenty-four weeks, and the mean weekly temperatures of the air, and of the earth at one and four feet deep:—

Week Ending	Deaths.	Temp.			Week Ending	Deaths.	Temp.		
		Air.	1 ft.	4 ft.			Air.	1 ft.	4 ft.
		°	°	°			°	°	°
June 11 ..	—	55·2	57·7	50·4	Sept. 3 ..	36	54·8	59·9	57·1
„ 18 ..	2	52·0	58·3	51·7	„ 10 ..	27	64·2	63·6	57·0
„ 25 ..	1	55·4	60·9	52·8	„ 17 ..	27	60·7	61·8	57·5
July 2 ..	1	54·7	60·5	53·6	„ 24 ..	22	52·4	58·6	57·3
„ 9 ..	2	55·1	62·7	54·4	Oct. 1 ..	12	47·2	52·9	56·6
„ 16 ..	2	58·8	64·1	55·3	„ 8 ..	7	50·7	53·7	55·5
„ 23 ..	5	57·9	64·4	56·4	„ 15 ..	7	45·7	50·6	54·7
„ 30 ..	4	54·9	62·9	56·9	„ 22 ..	3	49·5	51·9	53·8
Aug. 6 ..	9	57·9	63·0	57·0	„ 29 ..	6	52·4	52·6	53·2
„ 13 ..	22	56·8	60·4	56·7	Nov. 5 ..	5	49·2	50·1	53·1
„ 20 ..	19	61·8	64·2	56·9	„ 12 ..	4	47·4	48·2	52·3
„ 27 ..	35	58·4	63·0	57·3	„ 19 ..	2	47·6	49·6	51·5



Allowing about a fortnight for the average period between contracting the disease and death, this table would show that as soon as the 4 ft. deep temperature exceeded  $52^{\circ}$ , or the 1 ft. deep exceeded  $60^{\circ}$ , the epidemic began; reached its maximum with the maxima of these temperatures; and that the 1 ft. deep temperature fell more rapidly, and the 4 ft. more slowly than the epidemic subsided. These are the same conclusions indicated by the epidemics of 1895, 1896, and 1897.

The following Table gives the annual Diarrhœal deaths since 1890, and the weekly means of the 4ft. deep earth temperature, the figures in the columns after the second give the number of weeks in each year during which this temperature exceeded the degree at the head of the column :—

	Deaths.	$52^{\circ}$	$53^{\circ}$	$54^{\circ}$	$55^{\circ}$	$56^{\circ}$	$57^{\circ}$	$58^{\circ}$
1890	87	19	18	17	15	11	7	—
1891	120	18	15	12	3	—	—	—
1892	67	17	14	8	3	—	—	—
1893	227	22	19	15	13	10	5	1
1894	99	17	15	13	10	2	—	—
1895	255	20	18	16	14	10	—	—
1896	199	20	18	16	14	8	1	—
1897	319	20	17	14	11	7	4	—
1898	290	21	19	15	13	11	6	—

The following gives similar figures for the 1ft. deep earth temperature :—

	Deaths.	$60^{\circ}$	$61^{\circ}$	$62^{\circ}$	$63^{\circ}$	$64^{\circ}$	$65^{\circ}$	$66^{\circ}$
1890	87	7	4	1	1	—	—	—
1891	120	4	1	—	—	—	—	—
1892	67	1	—	—	—	—	—	—
1893	227	12	9	8	4	1	1	1
1894	99	6	4	1	1	—	—	—
1895	255	8	3	3	2	—	—	—
1896	199	10	7	4	4	3	—	—
1897	319	11	8	7	5	1	1	—
1898	290	12	9	8	6	3	—	—



On pages 16 and 17 of the 1897 Annual Report, these Tables, and the Diarrhœal fatality, are commented upon in terms which might be repeated verbatim here.

BOROUGH HOSPITAL.

The Quarterly numbers dealt with have been as follows :—

Quarters.	Remaining in from previous quarter.	Admitted for		Total Discharged		Died.		Average No. of days in of the cases admitted.	Average daily No. of Patients in Hospital.
		Scarlet Fever.	Small Pox.	Scarlet Fever.	Small Pox.	Scarlet Fever	Small Pox.		
First ..	61	57 <sup>a</sup>	..	86	..	7 <sup>b</sup>	..	46·8	36·5
Second ..	32	85	..	74	..	4	..	46·5	39·2
Third ..	43	66 <sup>c</sup>	..	76	..	4	..	46·7	37·7
Fourth ..	33	79 <sup>d</sup>	..	86	..	6	..	44·0	40·2
Year ..	61	287	..	322	..	21	..	45·9	38·4

*a.*—4 from Bushbury and 2 from Tettenhall.

*b.*—One of these deaths was a case of Diphtheria, erroneously sent into the Hospital as Scarlet Fever.

*c.*—2 from Bushbury and 1 from Tettenhall.

*d.*—1 from Bushbury.

Leaving only 26 cases in at the close of the year.

*First Quarter.*—57 cases were admitted for Scarlet Fever ; one of these was a case of Measles, and one of Diphtheria, the latter fatal. Of the 55 cases of Scarlet Fever four were fatal—A, 3 years old, severity of attack, 2 days in. B, 4 years old, very severe naso-pharyngeal mischief and adenitis, suppuration, rather sudden death ; 13 days in. C, 2½ years old, very severe naso-pharyngeal mischief, adenitis, 8 days in. D, 4 years old, very severe naso-pharyngeal mischief and otorrhœa, 7 days in. Seven other cases were very severe, and 4 severe. The principal complications were—Otorrhœa,

3 cases. Rhinitis, 11 cases. Adenitis, 11 cases. Suppuration, 5 cases. Albuminurea, 4 cases. Skin Affections, 6 cases. Onychia, 2 cases. Conjunctivitis, 1 case. Laryngitis, 1 slight case.

*Second Quarter.*—85 cases were admitted and treated for Scarlet Fever. 5 of these were fatal—A, 2 years old, very severe naso-pharyngeal mischief and adenitis, 8 days in. B, 2 years old, when forty days in and convalescent caught diphtheria, and died after one day. C, 4 years old, very severe naso-pharyngeal mischief and adenitis, 7 days in. D, 4 years old, sloughing stomatitis, septicæmia, membranous pharyngitis, 27 days in. E, 4 years old, adenitis and suppuration, sloughing, toxæmia, 21 days in. Six other cases were very severe, 14 severe. Complications—Otorrhœa, 12 cases. Rhinitis, 7 cases. Adenitis, 14 cases. Suppuration, 5 cases (2 mastoid). Albuminurea, 4 cases. Acute Rheumatism, 1 case. Skin Affections, 3 cases. Onychia, 2 cases. Pneumonia, Cellulitis, Iritis, 1 case each. Besides the fatal case of Diphtheria mentioned above there were three severe cases of secondary sore throats, 1, 40 days after admission; 2, 18 days after admission; 3, 9 days after admission, associated with sloughing stomatitis and purpuric rash, similar to the fatal case D. One case had a well-marked attack of Measles 29 days after admission, source of infection undiscovered.

*Third Quarter.*—66 cases were admitted, but one was not Scarlet Fever. Of the 65 cases of Scarlet Fever 2 were fatal—A,  $3\frac{1}{2}$  years old; sloughing stomatitis and septicæmia; 15 days in. B, 3 years old; toxæmia; 5 days in. Five other cases were very severe and 10 severe. Complications—Otorrhœa, 4 cases. Rhinitis, 3 cases. Skin affections, 6 cases, including 2 of Psoriasis, one came in with it, the other was subject to it and developed it during convalescence. Adenitis, 6 cases. Suppuration, 3 cases. Stomatitis, 2 cases. Albuminurea, and Onychia, 1 case each. One case of severe secondary sore throat, 21 days after admission.

*Fourth Quarter.*—79 cases were admitted, 77 were treated for Scarlet Fever. Of these 6 were fatal—A, 7 years old; double adenitis, septic rash, stomatitis, toxæmia; 32 days in. B, 6 years old; severe

stomatitis, albuminurea, cellulitis, septic rash ; 25 days in. C, 3 years old ; severity of attack, toxæmia ; 25 days in. D, 5 years old ; 16 days after admission, when peeling freely, had a severe attack of scarlet fever, toxæmia ; died in four days. E, 4 years old ; severity of attack, toxæmia ; 15 days in. F, 3 years old, severity of attack, toxæmia ; 11 days. Besides these, 11 cases were very severe, and 8 severe. Complications—Otorrhœa, 4 cases. Rhinitis, 3 cases. Adenitis, 7 cases. Suppuration, 1 case. Albuminurea, 12 cases. Two cases had severe delirium. One case had Whooping Cough when admitted. Besides the apparently second attack in the fatal case D above, another case peeling freely when admitted had a smart attack of Scarlet Fever 10 days later. One case admitted with slight sore throat and a rash, but nothing typical of Scarlet Fever had a severe attack four days after admission.

The following Table gives the proportion of cases without definite signs of Scarlet Fever when seen on admission, and the results:—

Quarters.	Total Admissions	Indefinite when admitted.				
		Total.	Apparently not had Scarlet Fever.			
			Total.	Safely Discharged	Caught Scarlet Fever.	Died.
First ...	57	12 <sup>a</sup>	3	...	3	...
Secoud ..	85	8	1	...	1	...
Third ...	66	4	1	1	...	...
Fourth ...	79	11	3	2	1	...
Year ...	287	35	8	3	5	...

<sup>a</sup> Besides these one evident case of Measles, and one of Diphtheria were amongst the 57 admitted.



Thus out of a total of 287 cases sent in, besides the two errors mentioned in the foot note above, only 8 proved not to be Scarlet Fever. This is a very small proportion of mistakes, especially considering the circumstances under which so many of the cases are seen outside. Five of these cases caught the Fever in the Hospital, but fortunately all recovered.

We were very fortunate in respect of the occasional cases of Diphtheria, Measles, and Whooping Cough, which occurred in or were admitted to the Wards, inasmuch as in no instance had we any extension to other cases. No doubt this was largely due to the fact that we were at no time pressed for room.

*Return Cases.*—By these are meant cases that occur in a household to which a patient has lately come home from the Borough Hospital; and these cases therefore represent the greatest failure of Hospital isolation. We have had a considerable number of such cases, a very disappointing number, considering that we were not over-pressed in the Hospital. The following are the particulars of every case after the return home of which any further case occurred. A left the Hospital on July 1st; 43 days in, 46 ill; went to the country, not returning home until July 14th, on July 13th another case occurred at home, and 27 days later two more cases occurred. B had been 45 days in, 47 ill; 34 days after return home another case occurred. C had been 44 days in, 47 ill; 24 days after return home there was another case. D had been 42 days in, 44 ill; no complications; 22 days after return home another case occurred. In none of the above instances could infection be reasonably attributed to the case from the Hospital. E had been 50 days in, 52 ill; had adenitis and albuminurea while in, and some scaliness of nostrils; since return home had occasional cold in the head; 18 days after return another case occurred; three other children in the house in constant contact with E escaped. F, 43 days in, 46 ill; no complications in Hospital; mother said nose and ears were discharging after return (probably inaccurate), 18 days later there was another case. G, 42 days in, 46 ill; no complications; 16 days after return another case. H, 46 days in, 47 ill; no complications; went to country, did not return

home for a week after leaving Hospital, 8 days later another case occurred. In these four instances infection from the Hospital is most improbable. I, 47 days in, 48 ill; no complications; 13 days after return another case. J, 57 days in, 60 ill; detained because of fissure in nostril, slight adenitis, and whitlow; 11 days after another case occurred. K, 52 days in, 54 ill, a very severe case, nose sore since coming home, but is said to have been kept quite apart from the other children; 10 days after return another case. L, 44 days in, 47 ill; adenitis 36 days before discharge, nothing else; 10 days after return another case. In these four instances infection was possibly from the Hospital case, but it does not seem probable. M, 43 days in, 46 ill; very severe case, stomatitis and adenitis; 7 days after return another case. N, 43 days in, 45 ill; had been always subject to otorrhœa, a few days after return had thick nasal discharge; 7 days after return there was another case. O, 43 days in, 49 ill; no complications, brought home no clothes from the Hospital; 6 days later another case. P, 47 days in, 50 ill; adenitis, slight indurated gland when discharged; 6 days later another case. Q, 49 days in, 53 ill; had had rhinitis in Hospital, badly chilled on the way home, and had severe cold with nasal discharge after return; a fresh case 5 days after return. R, 53 days in, 58 ill; had rhinitis in Hospital, day after return had otorrhœa and sores on face; 5 days later another case; and a case occurred at a house where the mother called with R on her way home from the Hospital. S, 43 days in, 45 ill; parents had urged this child's discharge for some time previously and promised great care; on his return he was put to sleep with another child, who had Scarlet Fever 5 days later; S had picked his nose and it was slightly sore since his return. T, 49 days ill, no complications in Hospital, but nasal discharge the day after return; 4 days after return another case. U, 40 days in, 46 ill; no complications; in 4 days another case. V, 50 days in, 53 ill; detained because of fissure at the angle of the mouth, the day after return home mother said he had "gatherings of elbow and hand, and offensive discharge from nose"; in three days another case occurred. In these ten instances infection was most probably from the Hospital case. It is not easy



to see how the infection was carried in some of the cases. Disinfection of clothes may have failed, but this is not likely, as we have not noticed fresh cases where only disinfected clothes were sent home. It is more probable that either in the hair, which is difficult to thoroughly disinfect, or, more likely still, in the nasal passages, some infective material may get lodged and this may be liberated after the return home. In view of such chances a card is sent out with every case pointing out the impossibility of securing absolute safety, and urging that the case should be kept apart from other children for at least a week after returning home. Sometimes this is not possible, and it is very rarely attended to. Above cases contain some striking examples of such negligence. The Summary of the above details is, out of 301 cases who returned home, fresh attacks occurred in 22 instances, in 4 of these infection was practically impossible; in 4 it was possible, but most improbable; in 4 it was possible but rather improbable; in 10 it was most likely due to the Hospital case. Of the 22 instances it is rather remarkable that only 3 occurred in the East, but these 3 were amongst the last class of 10 cases where infection was probable.

## METEOROLOGY.

(See Table 3.)

*First Quarter.*—The weather was exceptionally mild, and as a rule very fine. During the first seven weeks the day temperature was remarkably high, and there were only occasional slight frosts at night. On February 19th there was a severe frost, and severe frosts every night during the following (the eighth) week, and also during the twelfth week. The eighth and tenth weeks were very cold (mean temperatures,  $31.9^{\circ}$  and  $32.7^{\circ}$ ). January 3rd was very foggy.

The prevailing winds were Westerly, veering from North and South; during the tenth, twelfth, and thirteenth weeks there were East winds, severe during the last two weeks. The fifth week was stormy. There were high winds on January 18th, 19th, and 29th; February 15th and 16th; March 24th, 25th, and 26th were very stormy.



The total Rainfall was 3·44 inches ; an exceedingly small amount. There was almost no heavy rain ; there were two wet days during the first week ; the fifth week was wet and stormy ; on February 7th there was snow, hail, and rainstorms ; and there was slight snow during the twelfth week.

The Humidity was 87, low for the season.

The Barometer was rather lower than usual, especially towards the close of the Quarter.

*Second Quarter.*—The temperature was mild. There were a few night frosts in April, but the mean temperature was high ; May and June were both warm.

During the third and fourth weeks the wind was Easterly inclining to South ; during the seventh, eight, tenth, and eleventh weeks it was North-Easterly. The amount of wind was very moderate.

The total Rainfall was fairly high, 7·34 inches. April was fine ; there were a fair number of showers, but only two very wet days. May was very wet ; and the weeks ending June 4th and 25th and July 2nd were excessively wet (three weeks, 3·23 inches of rain) but the fortnight ending June 18th was very fine. There was a thunderstorm and heavy rain on the morning of May 22nd, and thunder with hailstorms of most exceptional severity on May 31st and June 1st and 22nd.

The Humidity was 77, very low considering the heavy rainfall and the moderate amount of wind.

The Barometer was rather low, especially considering the dryness of the air. Variations were moderate, and as a rule gradual.

*Third Quarter.*—The temperature was very high, and remained high an exceptionally long time. After an unusually mild May and June, it became very hot the second week in July (mean temperature 58°8), this was fairly maintained until the last week in August, when after a thunderstorm and rain it was cooler for several days, but the temperature rose again and continued very high for the first

half of September, it then moderated slightly, and the last week in September was cool; there were two nights' frost in this week, the temperature on the night of the 25th falling to 26° 3.

The prevailing winds were Westerly, inclining to North. During the third week in August they were East and North-East. The amount of wind was very low.

The total Rainfall was very low, 3·22 inches. During three weeks (2nd, 10th, and 12th) no rain was recorded. The total recorded amount during three other weeks was only one-tenth of an inch. July 22nd was very wet, there was heavy rain on August 6th, there was a thunderstorm on the night of August 21st, and some heavy rain on the 26th and 27th; there was heavy rain on the afternoon and night of September 29th. During the rest of the Quarter there were only a few slight occasional showers.

The Humidity, 77, was low.

The Barometer as a rule was high and steady.

*Fourth Quarter.*—The temperature was most extraordinarily high for the season; it was very mild until the last few days of November, which were very cold, when it again become mild, and continued so with the exception of a very occasional cold day. The only frosts were during the eighth, ninth, and twelfth weeks, 26° 0 was the lowest temperature. The mean weekly temperature was only twice below 40°, during the eighth week (38·8), and the twelfth (39·4).

The prevailing wind was South-West; during the first three weeks, and on the sixth, seventh, and eighth weeks, the wind was frequently South-East. The amount of wind as a rule was low, but the fifth, ninth, and tenth weeks were windy, and there were gales on November 23rd and December 4th and 5th.

The total Rainfall was moderate, 6·16 inches. The first fortnight was dry, only some showers, mostly at night; there was heavy rain in the third week; it was then fairly fine until the eighth week, when



there was some heavy rain ; there was a snowstorm on November 22nd. It was then, except for occasional showers, dry until the last week, which was very wet ; there was a heavy rainstorm on December 26th.

The mean Humidity was high, 91. Though the rain was moderate, it was usually dull and damp ; there was no actual fog except on the morning of December 13th.

The Barometer was very unsteady during the Quarter, at times it fell extremely low without any evident cause ; the variations at times were very sudden and extreme ; this was especially the case during the second, third, eighth, and thirteenth weeks.

---

## Explanatory Remarks on the Tables.

The Returns made by the Registrar for the East Sub-District include all deaths occurring in the General Hospital and Workhouse ; many of these are from outside the Borough, a few are returned as " no home," the others are of persons from the East and West Sub-Districts. Throughout the Tables the few cases returned as " no homes " are included in the East figures ; the deaths from outside the Borough are excluded altogether (except in the uncorrected figures in Table 8), and the deaths from the East and West are referred to their own Sub-Districts. Particulars of these deaths in the Hospital and Workhouse are given in Table 7. In Table 8, the comparison between the Sub-Districts in all years before 1884 is misleading, as the East deaths include many really belonging to the West ; the second row of figures in each year since 1884 are the corrected returns, the first row (given to compare with former years) are the Returns as sent in by the Registrars.

Table 10 gives our comparison with the other 32 great towns. The third column in this Table does not give the actual death rates, but the rates corrected for the age distribution of the populations. The death rate varies in the different age decades, for instance, is very high under 5 years and over 60 years ; comparatively low



between 20 years and 40 years. Thus a district whose population consisted of persons under 5 years and over 60, with a death rate of 40, might be far healthier (as far as death rate is an index of health) than a district whose population was between 20 and 40 years, with a death rate of 10. In the third column in Table 10 the rates are what they would have been had the age distribution in each town been the same as in England and Wales, and are therefore a much more accurate comparison than the actual death rates.

---

## VITAL STATISTICS.

Attention has been drawn by Dr. Henry May, the late Medical Officer of Health for Aston Manor, to the effect which a low birth rate has in reducing the death rate, by decreasing the proportion of young children in the community, the fatality amongst these being so very high; and he has shown that much of the general decline in death rate throughout the country has followed after, and is due to, a fall in the birth rate. I have myself frequently pointed out that Wolverhampton has a high proportion of child population as compared with the 33 great towns. This year our birth rate (35·8) is the highest in the country, and actually 5·5 higher than that of the 33 towns collectively (30·3). In the total death rates in Table 10, correction is made for differences in character of population; but in the death rates due to Zymotics this is not done, and, as most of these diseases mainly affect children, our conditions would affect the comparison with other towns unfavourably for us. In the general corrected death rate, however, we stand rather badly, our rate (22·26) is only exceeded by six of the towns, and is 1·68 higher than the average of the 33 towns. But after all, the great towns' rate is a low ideal. England and Wales, less the 33 great towns, still contains 67 large towns, and many very insanitary smaller districts; yet this death rate for the year is only 16·52—5·74 less than ours. This means that 476 lives have been lost in Wolverhampton during the year more than would have been the case had our rate been the same as that of England and Wales, less the 33 great towns. Out of a total of 1,845 deaths, 476 saved, that is a very large item.

Turning to the other particulars in Table 10, our Zymotic Death-rate is high, only 6 of the towns being higher. This is mainly due to our heavy Death-rate from Diarrhœa, and partly to our Influenza deaths. Measles we have been very free from, only 2 of the towns having lower rates. Scarlet Fever we stand high in, only 3 of the towns exceeding us; but this is due to the generally low Scarlet Fever returns, and the precautions which are now practically taken in all the towns; our rate, 0·26, is really a very low one, and this includes 2 deaths from outside the Borough, our real rate is only 0·23; the towns' rate is remarkably low, 0·14, even Measles, 0·56 is four times as high. In Diphtheria we still stand high, though not so badly as of late years; one town equals and three exceed us; our rate 0·43 exceeds the towns' (0·31) by 0·12. Whooping Cough we have been very free from, our rate is less than one-fourth the towns'. Typhoid Fever we are usually very free from, two of the towns have the same rate and 15 exceed us, some of them greatly. Diarrhœa is really our most serious item, our rate 1·95 is much more than all our other Zymotics put together, and is exceeded by only two of the towns. In consequence of the heavy Diarrhœa our child fatality is high, only four of the towns exceed us. the two highest of these being those whose Diarrhœa rate exceeds ours. I dwell on these figures particularly because they are so unsatisfactory. We are fairly free from the ordinary Zymotics, we have been spared epidemics of Measles, Whooping Cough, or Diphtheria; Scarlet Fever has happily not been epidemic, and our efforts have sufficed to keep it very low. We have a good water supply, and have probably thus kept free from Typhoid Fever; and yet our Death-rate is high, enormously higher than that of the country outside the large towns. The truth is that town death-rates are not high because of ordinary Zymotics, the ordinary outcry about some bad smell, that it will "breed Fever," is simple nonsense. The only towns' condition that makes them specially susceptible to the ordinary infectious Zymotics is the aggregation of the people, and these diseases when they do become epidemic are fatal on this account, and because of carelessness and negligence as regards the segregation and disinfection



by which alone they can be met. The only Zymotic that has seriously contributed to our high rate this year has been Diarrhœa, and this in a peculiar degree a disease of large towns, and undoubtedly due to special conditions to be found in them. So that its excessive prevalence in our Borough is a grave index of something unsatisfactory in our condition. But even the Diarrhœa epidemic, severe though it has been, will not explain all our 476 unnecessary deaths, these are in part due to other causes which I will comment on later. Of course what I have said applies to many of the towns just as much as to ours, indeed to most of them; but that does not make us any the better; and even amongst the large towns our position is not satisfactory.

So much for comparison with other districts, now for a comparison with our past.

The longest record I have is that given in Table 8. From 1884 the lower figures given each year are correct, the upper include in the Borough deaths of outsiders, and in the East include these and also deaths belonging to the West which occurred in the Hospital and Workhouse in the East, so that the upper figures are useless as regards any comparison between the two Sub-Districts, but they are roughly useful for comparison with former years. Taking the average rates for 10, 10, and 6 years, we have—

Years.	East.	West.	Borough.
1873-82	28·04	18·30	23·54
1883-92	28·34	16·76	22·36
1893-98	30·78	16·43	23·01

Taking the figures for the Borough, we must remember that owing to exceptional hot summer during the last six years, there have been five Diarrhœa epidemics, a quite unprecedented occurrence. Further, the almost yearly prevalence of Influenza has added a new fatality to these years. So that the excess of the last six years over the previous decade is more than accounted for by special circumstances, and we may conclude, barring such, our death rate has steadily diminished.



But the East and West returns (at least the former) are desperately unsatisfactory. Whatever special circumstances may have affected the Borough can hardly have been more potent for six (or sixteen) years in the East than in the West ; and whereas we find a steady fall in the West death rate there is actually a steady rise in the East.

Taking the corrected returns since 1884, and the averages for nine and six years, we have—

Years.	East.	West.	Borough.
1884-92	23·84	18·22	20·95
1893-98	25·40	18·11	21·48

These figures give the same general conclusions, and actually show that the difference in the death rates of the two Sub-Districts, grave enough in the first nine years (5·62), has been much increased in the last six (7·29). It is necessary to consider how far the birth rates may affect these death rates ; no doubt the excess in the East is in part due to its higher birth rate, and in consequence greater child population ; for the last 15 years the average birth rate has been 37·5 in the East as compared with 30·9 in the West. Dividing this fifteen years into three equal periods, the East birth rates for each of these has been 36·5, 37·3, 39·1 ; the West, 31·8, 29·8, 31·3, the differences being '84-88, 4·7 ; '89-93, 7·5 ; '94-98, 7·8. This increase in the difference of the birth rates would account for most, if not all, the increase in the difference of the death rates.

The average Borough Birth-rates for five five-yearly periods have been, 39·0, 36·9, 34·3, 33·5, 34·9. These figures show a close relationship to the Death-rates in Table 8, remembering that the Birth-rate would produce its effect on the Death-rate of the few years following. Of course the above averages only give a very rough idea of the actual facts.

As compared with the last ten years, see Table 9, the year has been a fairly good one, and closely resembles last year, in spite of a high Diarrhœa Death-rate, the lowness of all other Zymotics, and

the moderate returns from Phthisis and Respiratory Diseases (due to mild weather), give a total rate below the average. We are even better than last year, all Zymotics being considerably lower.

It is always instructive to consider the statistics of our Sub-Districts separately. From Table 5 we see the West has a Birth-rate 32·3, slightly above the 33 great towns (30·3), the Death-rate 18·3, is 1·78 higher than that of England and Wales, less the 33 towns. For a District, the greater portion of which is good residential properties, with plenty of open spaces, this is a bad Death-rate, but the West does contain some slum property, in fact some of the worst in the Borough. The East has a Birth-rate 39·8, 9·5 higher than the average of the great towns, and a Death-rate 24·2, 7·68 higher than England and Wales less the great towns. In comparing the East figures (except rates) with those of West it must be remembered the populations are nearly in the proportion of 4 to 5. Comparing figures for the year in Table 5, deaths over 60 in the East slightly exceed those in the West, the 183 East deaths would be equivalent to about 220 deaths in the West, whereas 210 occurred. From Table 6 we see that from 60 to 75 years, there are 127 in the East, 129 in the West; over 75 years, 56 in the East, 81 in the West, showing a larger proportion dying between 60 and 75 years in the East, but a smaller proportion surviving beyond 75 years. Taking the difference in the Birth-rates and the populations into account, the 354 deaths under 1 year in the East would be equivalent to about 360 in the West, where 280 actually occurred; showing a great excess of infant mortality in the East. From 1 to 5 years the East is also (but less heavily) in excess. The ordinary Zymotics are so low in both Sub-Districts that they affect the total Death-rate but little, they amount to 50 deaths in the East and 61 in the West. Influenza has apparently caused a much heavier fatality in the West, 27, East only 8. This may be due to the chest complications (which usually cause the fatal result) being registered in the East without mentioning the primary cause. Respiratory deaths are greatly in excess in the East, 169 to 150; to be equivalent to the West the East deaths should be only about 120. Some of the excess may be cases of



Influenza. Phthisis is proportionately heavier in the East. Diarrhœa deaths are best compared from Table 4. This shows an enormous excess in the East, 173 deaths are due to Diarrhœal disease, 163 being under 5 years, against 117 in the West, 113 being under 5 years old. Table 6 shows 35 deaths of infants from convulsions in the East, against 17 in the West, and 55 from Debility as compared with 48.

The General Summary of our Statistics is as follows :—There is a slight improvement on former times, taking into account a sufficient number of years to neutralize temporary variations. Our death rate still, as compared with a moderate standard, shows an enormous avoidable sacrifice of life, amounting to about 470 lives in the year. These deaths are the index of an incalculable amount of illness, suffering, and bad health. Roughly speaking about 170 of these avoidable deaths have occurred in the West Sub-district, being mainly due to Diarrhœal diseases (diseases which are specially aggravated by insanitary town conditions) and partly due to Phthisis, chest affections, and constitutional debility in children. About 300 avoidable deaths have occurred in the East Sub-district, from an even greater degree of those causes mentioned above.

---

## SANITARY CONDITION.

A large proportion of our avoidable disease and death is due to ignorance, bad habits, and poverty. Improper feeding, lack of care, neglect of cleanliness and ventilation, dissipation, insufficient food, clothing, and shelter account for probably the greater part of our high fatality and the bad health of which it is an index. But when every allowance is made, it is evident that insanitary town conditions must also be a serious factor. The rural population is as ignorant, has as bad habits as, and is probably poorer than, the urban ; so that these things alone will not explain the difference between the two. But there is one essential difference between the urban and rural populations as regards the sanitary conditions under which they live, and



that is, the comparatively abundant supply of fresh air which the latter have as compared with the former. Few realize what a difference the vicinity of buildings makes in the amount of air change; a year's observations with two anemometers, one in a rather low situation in the West Park, the other in a not very confined space in Little Brickkiln Street, showed that more than four times more wind passed through the Park site than through the other. This fact, the importance of which I have always insisted on, has been emphasized of late by the attention given to Tuberculous Diseases, which cause so much of our fatality; it is now well recognized that in the prevention, and even in the cure of these diseases, an abundance of fresh air is the most important factor. Nearly all our old back streets are narrower than would be permitted now, this allows that they are too narrow. They lie too close together. And the spaces between them are usually occupied by courts surrounded by dwelling houses. This whole state of things is in the worst degree insanitary, and is the main cause of our death rate excess over the country. I wish to impress this forcibly on the attention of all who are interested in our public health; the fact is indisputable; it is briefly this, almost all the houses of our poor are too close together for those in them to live in even moderate health. Those who are dissatisfied with this state of things must endeavour, as far as possible, to alter them, and, so far as this is impossible, to modify them and neutralize their evil effects. Those who object to the cost or other sacrifices entailed by these efforts, allow that they are content with our avoidable ill-health and loss of life.

The provision of more-open dwellings for the labouring class, and concurrently gradually doing away with all our courts, and the turning of them into open spaces, for that is the ultimate need, I have already dwelt on; and the matter is receiving attention. I have also pointed out that such work must be exceedingly slow; I now wish to dwell on other preventable conditions which aggravate the ill effects of the overcrowding of dwellings, and which can be, and are promptly dealt with. When the total air supply is so gravely deficient, it is most essential that every cause of air impurity should

be reduced to a minimum ; and almost all ordinary Sanitary work, more especially Nuisance Prevention work, is the endeavouring to carry this into effect. I particularly dwell on this now because some persons who do not understand the absolute necessity of this work, and who, therefore, in their ignorance, look upon it as extravagant or quixotic, object to the cost which it entails on the Borough, or, still more, on themselves when they are asked to comply with our Notices. The surface of many of our yards and courts are uneven, and absorbent ; they become saturated with organic filth, and are a grave and continual source of air impurity (so much so that one eminent authority considers this condition a large factor in the causation of Summer Diarrhœa). That such surfaces should be levelled, and in many cases paved, is imperative, yet it is often objected to. The keeping of animals (more especially of pigs), of poultry, of hogwash, or accumulations of manure, all tend to vitiate the air, and are far too common in the Borough. The removal of them often appears a hardship, and yet is a necessity. Defective closets, untrapped or defective drains, drain catch-pits, are all grave sources of air pollution. Under the same category come drains that are not absolutely watertight, such cause continuous soil, and ultimately air pollution. Of course, in an old town like ours, all these and many other defects abound, and moreover are, many of them, when removed apt to recur. Immense additions have been made to the town of late years of open property, built under better regulations and supervision ; but even this property is often found to be very soon defective, even structurally ; it is surprising how many of our notices refer to comparatively new houses. There is a vast amount of work to be done before our Sanitary Staff can overtake present defective conditions, and when they have done that, if they can ever do it, it will take scarcely less efforts to maintain that state of things.

Many Sanitary Authorities are making excellent efforts to better the Health condition of the poor by instruction, partly by lectures, but most practically by Lady Inspectors, whose functions are mainly in the direction of giving personal guidance and teaching to mothers in their homes. This is a noble work ; the ignorance and



prejudices of mothers (in all classes) certainly cause much ill-health and many avoidable deaths. One of the greatest of Sanitary advances is the teaching of girls Domestic Economy and Hygiene, to many of them more essential than to a man the knowledge of his trade or business. The practical knowledge of food and cooking, cleanliness and ventilation, infant feeding, and clothing generally, is a necessity to every housekeeper, and the general neglect of this teaching hitherto has been a serious public evil. But while fully alive to all this, I am not prepared to advise our adoption of the method of personally instructing the mothers in our poorer homes as yet. Although undoubtedly some good would be done, I doubt if it would be enough to justify the cost. And many of those living in our courts and back streets are placed in surroundings too discouraging for any instruction. If these surroundings were bettered then the instruction would have a fair chance.

---

## SANITARY INSPECTION

Owing to the lamented death of Inspector Blanton, after a long and severe illness, the work of the Inspection Department has been somewhat disorganised. At the close of the year I went through the whole of the system of work with the new Chief Inspector, Mr. J. Peers, and the routine was carefully remodelled and put on an excellent basis. The result of this will appear in a full Report from the Chief Inspector in future ; for 1898, that of course is not possible, but the few Tables appended will show that much work has been done.



## STATISTICAL SUMMARY, 1898

	EAST		WEST			
	SUB-DISTRICT.		SUB-DISTRICT.		BOROUGH.	
Area—Acres .....	828	.....	2,697	.....	3,525	
Population* .....	39,350	.....	49,010	.....	88,051	
Density—No. of persons per acre .....	} 47·5.....		18·1 .....		24·9	
Inhabited Houses }	.....about 19,300					
Rateable Value—Total exclusive of Government Property .....	} £346.055		0s.		Od.	
Marriages.....			No. 930		Rate 10·6	
	No.	Rate	No.	Rate	No.	Rate.
Births.....	1,561	39·8...	1,579	32·3...	3,140	35·7
Deaths.....	951	24·2.....	894	18·3...	1,845	21·0
Zymotic Deaths	162	4·1...	168	3·4.....	330	3·7
Infantile Mortality Deaths under 1 year per 1000 births }	} 226.....		177.....		202	

---

\*Estimated to the middle of 1898, the Borough is not quite the sum of the Sub-Districts being estimated separately. The Estimate is on the supposition that the rate of increase from 1891 to 1901 is the same as from 1881 to 1891; this is certainly not the case; judging by our numerous new streets our increase in population must be far greater than the above estimate, probably some thousands greater. This would lower all our rates.

## INDEX OF TABLES.

---

- No. 1.—Cases of Measles, Scarlet Fever, Diphtheria, and Typhoid Fever recorded during the year 1898.
- „ 2.—Weekly Returns under the Infectious Diseases Notification Act, and prevalence of some other Diseases.
- „ 3.—Weekly Meteorological Returns and Death-rate.
- „ 4.—Weekly Returns of Deaths in the Sub-Districts.
- „ 5.—Quarterly Births and Deaths in the Sub-Districts and Borough.
- „ 6.—Deaths in the Sub-Districts during the year 1898, classified according to Ages and Diseases.
- „ 7.—Deaths during the year 1898, classified according to Diseases, Ages, and Localities, and the proportion of Deaths which occurred in Public Institutions.
- „ 8.—Deaths and Death-rates and Populations of the Sub-Districts and Borough for the past 26 years.
- „ 9.—Eleven years' Annual Returns of Deaths from various Diseases and at various ages, and Death-rates and Births and Birth-rates in the Borough.
- „ 9A.—Eleven years' Quarterly ditto.
- „ 10.—Various Death-rates, &c., in the 33 great Towns during the year 1898. (*From the Registrar General's Annual Summary.*)

*(See also Explanatory Remarks on the Tables on page 23)*

Table A.—Summary of routine work.

- „ B.—Special inspections.
- „ C.—Unwholesome food condemned and destroyed.
- „ D.—Houses closed as unfit for habitation.
- „ E.—Summary of circulars and notices served.

# TABLE No. 1.

*Cases of Infectious Diseases recorded in 1898.*

	EAST SUB-DISTRICT. POPULATION 39,350.					WEST SUB-DISTRICT, POPULATION 49,010.					BOROUGH, POPULATION 88,051.					TOTALS.			RATE PER 10,000 OF POPULATION.		
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	East Sub-District	West Sub-District	Borough.	East Sub-District	West Sub-District	Borough.
Small Pox .. { Under 5 years ... { 5 years & upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ... { Under 5 years ... { 5 years & upwards	6	32	15	...	53	29	19	3	1	52	35	51	18	1	105	66	118	184	16.7	24.0	20.9
Scarlet Fever { Under 5 years .. { 5 years & upwards	16	16	7	5	44	13	21	14	20	68	29	37	21	25	112	124	235	359	31.5	47.9	40.7
Diphtheria ... { Under 5 years ... { 5 years & upwards	8	7	13	2	30	16	4	5	10	35	24	11	18	12	65	76	126	202	19.3	25.7	22.9
Typhoid Fever { Under 5 years { 5 years & upwards	2	...	1	1	4	...	1	..	2	3	2	1	1	3	7	76	41	117	19.3	8.3	13.3





TABLE No. 2.

WEEKLY RETURNS under the Infectious Diseases Notification Act.  
and prevalence of certain other Diseases.

A few cases x.

Prevalent xx.

Very Prevalent xxx.

1898		Small Pox	Scarlet Fever	Diphtheria	Typhoid Fever	Puerperal Fever	Measles	Whooping Cough	Pneumonia	Influenza
Week ending										
January	8th	..	9	2	1	..	x	xx	xx	xx
"	15th...	...	6	2	...	..	x	xx	xxx	xxx
"	22nd	...	7	8	4	..	x	x	xxx	xxx
"	29th	...	6	6	2	...	x	x	xxx	xxx
February	5th	..	4	6	..	..	..	x	xxx	xxx
"	12th	...	7	5	1	...	...	x	xxx	xxx
"	19th	...	4	7	4	1	x	x	xxx	xxx
"	26th	...	8	4	2	1	xx	x	xxx	xxx
March	5th	..	7	3	1	..	xx	x	xxx	xxx
"	12th	..	8	4	..	...	xx	x	xx	xx
"	19th	...	7	5	3	..	xx	x	xx	xx
"	26th	...	6	5	3	1	xx	x	xx	xx
April	2nd	..	6	1	9	..	xx	x	xxx	xx
"	9th...	...	6	3	3	..	xx	x	xxx	xxx
"	16th	...	5	4	4	..	xx	x	xxx	xxx
"	23rd	...	12	2	1	1	xx	x	xx	xx
"	30th	..	6	..	1	..	xx	x	xx	x
May	7th	...	8	..	1	1	xx	x	x	x
"	14th	...	8	1	1	..	x	x	xx	xx
"	21st	..	6	3	1	...	x	x	xx	xx
"	28th	...	12	5	2	..	x	x	x	x
June	4th...	...	8	2	..	...	x	x	x	x
"	11th	...	10	2	..	...	x	x	x	..
"	18th	..	9	1	4	...	x	x	x	...
"	25th	..	2	2	2	...	xx	x	x	..
July	2nd	...	10	..	...	...	xx	x	x	...
"	9th	...	4	2	1	..	xx	x	x	...
"	16th	...	3	4	1	...	x	x	x	...
"	23rd	...	9	10	1	..	x	x	x	...
"	30th	...	6	6	3	..	x	x	x	x
August	6th	...	3	4	2	..	x	x	x	x
"	13th	...	5	11	...	...	x	x	x	x
"	20th	...	7	4	2	...	x	x	x	...
"	27th	...	7	7	5	..	x	x	x	...
September	3rd	...	8	2	2	...	...	x	x	...
"	10th	...	7	1	2	...	...	x	x	...
"	17th	...	4	4	2	...	..	x	x	..
"	24th..	..	2	4	2	...	...	x	xx	x
October	1st	...	9	5	5	...	...	...	xx	x
"	8th	...	14	3	7	...	...	...	xx	x
"	15th	..	17	1	5	...	...	...	xx	x
"	22nd	...	9	7	5	...	..	...	xx	x
"	29th	...	5	10	4	...	...	...	x	...
November	5th..	...	7	4	2	...	...	x	x	..
"	12th...	...	10	4	7	..	...	x	x	...
"	19th	...	9	2	3	..	...	x	xx	x
"	26th	...	7	6	3	...	...	x	xxx	xx
December	3rd	...	2	9	2	...	...	xx	xxx	x
"	10th	...	5	2	3	...	...	xx	xxx	xx
"	17th	...	11	1	2	...	...	xxx	xx	xx
"	24th	...	7	3	...	...	...	xxx	xx	xx
"	31st...	...	4	1	..	..	...	xxx	xx	xx
YEAR ..		...	368	200	121	5				

Tables 1 and 2 do not tally ; 1 including cases not reported by doctors,  
and 2 including cases which ultimately proved incorrect.





TABE No. 3.

Weekly Meteorological Report, from observations taken at 9 a.m. daily.

Week ending.		BAROMETER REDUCED TO 32° AND SEA LEVEL		Humidity	TEMPERATURE					Rain	WIND.		Death Rate per 1,000 per annum
					Max.	Min.	Mean	Earth			Prevailing Directions	Total in Week	
		Mean	Range					1ft.	4ft.				
1898		in.	in.	0-100	o	o	o	o	o	in.		mls.	
January	8th	29.998	.488	94	54.0	30.0	41.0	41.8	45.5	.88	SW, NW	1082	18.3
"	15th	30.385	.671	91	54.0	26.3	38.8	41.2	45.4	..	SW	830	29.6
"	22nd	30.376	.380	91	56.0	28.4	43.5	43.2	45.3	.02	SW	1566	21.9
"	29th	30.515	.244	88	52.2	31.5	40.3	43.0	45.7	..	SW	1239	29.6
February	5th	29.989	.990	84	56.8	25.1	40.9	43.5	45.9	.81	NW	2296	16.0
"	12th	30.070	.557	87	48.9	29.2	39.2	39.9	45.5	.26	NW, W, SW	1515	14.8
"	19th	30.087	.285	86	53.8	19.7	38.6	42.0	45.2	.30	W	1771	28.4
"	26th	29.736	.973	?	45.8	19.5	31.9	37.1	44.8	.19	NW	1135	30.2
March	5th	29.841	.335	86	47.7	23.7	36.7	38.3	43.9	.20	NW	1515	22.5
"	12th	30.124	.549	?	47.8	20.0	32.7	37.0	43.7	..	NE	785	16.0
"	19th	29.971	.265	85	54.7	27.0	42.3	41.9	43.2	.30	NW, SW	1640	22.5
"	26th	30.026	.466	82	52.7	23.0	34.9	41.2	43.9	.18	N, NW, NE	2243	16.6
April	2nd	29.665	.465	87	52.8	25.7	36.3	40.4	43.9	.30	NE, SE	960	24.8
"	9th	30.006	.449	73	66.0	23.5	45.0	45.3	44.1	.25	NW, SW	1722	19.5
"	16th	29.802	.360	78	56.9	32.4	44.6	47.6	45.1	.67	SW, NW	1614	20.7
"	23rd	30.020	.447	70	57.8	31.0	42.6	47.5	46.0	..	SE	1163	17.1
"	30th	29.801	.708	82	58.2	27.7	44.3	48.0	46.4	.56	E	1261	13.0
May	7th	29.792	.899	81	65.2	35.1	46.2	48.8	47.0	.62	SW	1542	17.1
"	14th	29.717	.907	82	60.7	32.3	46.3	52.5	47.7	.66	NW	1236	17.1
"	21st	30.024	.614	72	59.0	30.8	43.4	51.5	48.7	.68	NE	1614	21.9
"	28th	29.881	.299	81	69.0	32.4	48.4	53.0	49.1	.45	E	1008	10.0
June	4th	29.823	.619	77	60.6	34.0	46.3	54.2	49.7	1.17	NW, SW	1268	17.7
"	11th	30.039	.446	75	72.6	42.2	55.2	57.7	50.4	.07	N	934	13.6
"	18th	30.197	.592	81	73.2	36.0	52.0	58.3	51.7	.15	E, NE	935	16.6
"	25th	29.818	.715	77	75.0	41.8	55.4	60.9	52.8	1.00	W	1186	13.6
July	2nd	29.979	.633	78	70.2	42.0	54.7	60.5	53.6	1.06	NW	858	18.9
"	9th	30.219	.323	70	71.0	38.7	55.1	62.7	54.4	.01	NW	913	11.2
"	16th	30.184	.480	68	81.3	40.0	58.8	64.1	55.3	..	W, NW	705	17.1
"	23rd	29.993	.457	75	76.0	45.2	57.9	64.4	56.4	.41	NW, SW	1033	16.0
"	30th	30.099	.299	75	74.6	34.2	54.9	62.9	56.9	.28	NW	632	21.3
August	6th	29.969	.367	73	76.0	41.8	57.9	63.0	57.0	.86	NW, SW	1340	20.1
"	13th	29.980	.365	81	81.2	41.8	56.8	60.4	56.7	.20	NW, SW	906	27.2
"	20th	30.094	.135	82	79.9	47.5	61.8	64.2	56.9	.05	E, NE	1035	24.3
"	27th	30.041	.535	83	81.0	42.2	58.4	63.0	57.3	.51	SW	939	37.9
September	3rd	30.127	.525	71	75.4	42.0	54.8	59.9	57.1	.37	NW	1108	36.1
"	10th	30.127	.476	81	82.7	47.0	64.2	63.6	57.0	..	SE, W	805	30.2
"	17th	30.101	.473	76	81.0	46.1	60.7	61.8	57.5	.04	W, SW	1060	33.1
"	24th	30.108	.433	81	73.0	34.8	52.4	58.6	57.3	..	W	936	26.0
October	1st	29.988	.532	82	63.0	26.3	47.2	52.9	56.6	.49	SW, SE	910	23.1
"	8th	30.226	.420	96	67.5	37.2	50.7	53.7	55.5	.05	SW, SE	960	24.3
"	15th	29.881	.824	94	60.6	36.6	45.7	50.6	54.7	.32	SE	997	20.1
"	22nd	29.344	.869	97	62.0	40.4	49.5	51.9	53.8	1.38	SE, SW	1275	13.0
"	29th	29.946	.408	90	61.7	42.2	52.4	52.6	53.2	.49	SW	1261	24.9
November	5th	29.821	.740	82	59.9	37.8	49.2	50.1	53.1	.34	SW	1795	18.3
"	12th	30.036	.419	95	54.3	40.0	47.4	48.2	52.3	.34	SW, E	1184	18.9
"	19th	30.230	.571	93	59.8	38.4	47.6	49.6	51.5	.10	SW, SE	784	23.1
"	26th	29.508	1.429	95	47.1	26.0	38.8	44.3	50.9	.93	S, SE	1464	26.0
December	3rd	29.659	.569	90	56.2	27.6	41.6	42.6	49.4	.05	NE, SW	1717	27.2
"	10th	29.867	.499	94	56.8	38.2	49.1	46.8	48.7	.50	SW, NW	1894	14.8
"	17th	30.269	.244	89	54.7	33.2	46.9	45.7	48.8	.01	SW	1437	15.4
"	24th	30.326	.346	85	50.0	27.0	39.4	43.4	48.3	.22	SW	1170	12.4
"	31st	29.682	1.128	88	52.8	32.7	41.8	42.6	47.5	1.43	SW	1769	21.3

Total Rainfall in the year, 20.16 inches.





TABLE No. 4.—Weekly Returns of Deaths in the Sub-Districts.

Week ending		January		February		March		April		May		June		July		August		September		October		November		December		1898																														
		8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	31	Totals															
EAST SUB-DISTRICT	MEASLES	Under 5 yrs. 5 & upwds.		..	..	..	..	..	1	..	..	1	..	1	..	..	1	1	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11												
	SCARLET FEVER	Under 5 yrs. 5 & upwds.		..	..	1	..	..	..	..	..	..	..	1	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5													
	WHOOPING COUGH	Under 5 yrs 5 & upwds.		..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3														
	DIPHTHERIA	Under 5 yrs. 5 & upwds.		..	..	..	1	..	1	..	1	..	1	1	..	1	..	..	1	1	1	..	1	1	..	..	..	1	1	..	..	1	..	1	1	..	..	..	..	..	..	10														
	TYPHOID FEVER	Under 5 yrs. 5 & upwds.		..	..	1	..	..	1	..	..	1	..	..	1	1	..	..	1	..	..	..	1	..	..	..	2	..	..	..	2	..	..	2	..	..	..	..	..	..	1	12														
	DIARRHOEAL DISEASES	Under 5 yrs. 5 & upwds.		..	..	1	..	1	..	..	..	1	2	1	1	1	..	4	1	1	2	4	2	5	16	11	17	16	20	12	13	8	2	5	2	1	2	4	2	1	2	..	1	163												
	PHTHISTS	Under 5 yrs. 5 & upwds.		..	2	2	2	..	3	1	1	..	1	..	2	1	..	..	2	2	3	1	1	2	1	..	..	1	1	2	1	..	..	1	2	2	..	1	2	2	..	1	2	51												
	RESPIRATORY DISEASES	Under 5 yrs. 5 & upwds.		3	3	5	2	1	3	8	1	2	..	1	..	1	1	2	..	2	1	1	1	1	2	2	..	3	2	..	2	1	1	..	3	..	2	..	2	2	2	2	2	2	70											
	ALL CAUSES	Under 5 yrs. 60 & upwds. All Ages		3	8	5	12	6	7	11	17	10	12	4	3	5	4	8	6	4	4	8	5	3	13	2	7	2	8	7	3	10	12	11	21	19	26	24	23	18	19	15	8	10	4	6	7	11	8	9	10	5	5	5	5	478
			11	11	8	10	1	3	3	4	3	3	6	1	8	1	5	5	4	2	2	4	4	9	5	3	4	6	1	3	1	1	2	1	2	3	4	3	3	2	..	2	3	3	6	5	4	3	1	6	2	1	..	5	183	
			11	31	21	27	11	16	26	31	16	17	19	9	19	11	21	18	10	12	17	16	9	23	14	15	13	17	12	12	15	18	18	29	25	33	31	28	28	26	21	19	17	12	24	14	21	15	18	24	11	6	8	16	951	
WEST SUB-DISTRICT	MEASLES	Under 5 yrs. 5 & upwds.		..	..	..	..	1	..	..	..	1	2	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7												
	SCARLET FEVER	Under 5 yrs. 5 & upwds.		2	..	2	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	11										
	WHOOPING COUGH	Under 5 yrs. 5 & upwds.		..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6								
	DIPHTHERIA	Under 5 yrs. 5 & upwds.		2	..	..	3	1	..	2	1	1	..	2	..	1	..	..	..	..	..	1	..	1	1	1	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	20									
	TYPHOID FEVER	Under 5 yrs. 5 & upwds.		..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	1	..	1	6						
	DIARRHOEAL DISEASES	Under 5 yrs. 5 & upwds.		..	..	1	..	..	..	..	..	..	1	..	..	1	2	1	..	..	..	1	..	1	..	1	2	4	5	6	17	18	6	13	8	4	5	2	1	4	3	..	..	2	1	..	2	1	..	113						
	PHTHISIS	Under 5 yrs. 5 & upwds.		..	2	1	1	3	..	1	..	2	1	..	1	..	..	..	1	1	1	1	1	2	1	..	1	2	..	1	1	1	1	1	1	1	..	1	3	2	2	..	1	3	..	1	2	2	1	1	..	3	..	1	52	
	RESPIRATORY DISEASES	Under 5 yrs. 5 & upwds.		..	1	2	3	..	1	2	2	4	..	..	2	5	..	1	1	..	1	1	1	..	..	1	2	..	2	..	1	2	..	2	..	3	..	2	..	1	1	1	2	2	1	2	4	1	..	5	5	1	2	1	..	65
	ALL CAUSES	Under 5 yrs. 60 & upwds. All Ages		10	5	7	8	5	5	8	8	11	1	6	9	9	11	3	1	5	9	6	6	5	2	3	4	3	5	2	6	2	7	8	9	9	24	21	14	19	10	8	9	5	4	7	11	2	8	10	12	7	5	7	7	388
			3	4	2	9	5	3	4	3	8	3	7	2	9	4	7	6	..	3	3	4	..	3	2	2	3	4	2	4	5	4	5	5	4	5	3	5	1	3	7	5	7	1	4	2	3	4	5	4	2	8	5	4	210	
			20	19	16	23	16	9	22	20	22	10	19	19	23	22	14	11	12	17	12	21	8	7	9	13	10	15	7	17	12	18	16	17	16	31	30	23	28	18	18	22	17	10	18	17	11	24	26	22	14	20	13	20	894	



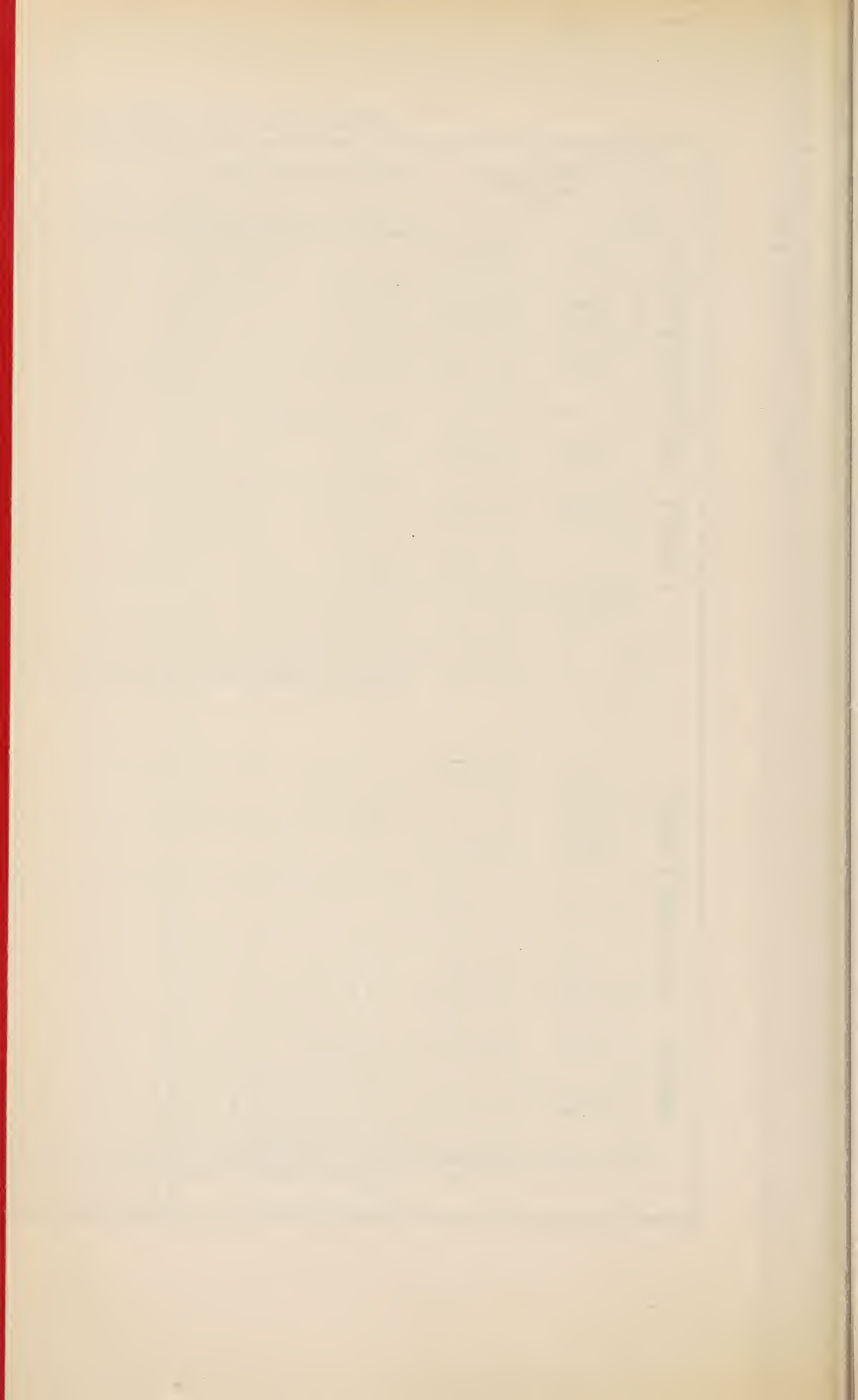


TABLE No. 5.—Quarterly Births and Deaths during 1898.

QUARTERS.		East Sub-District, 39,350				West Sub-District, 49,010				Borough, 88,051			
		Year.				Year.				Year.			
		1st	2nd	3rd	4th	1st	2nd	rd	4th	1st	2nd	3rd	4th
BIRTHS													
Males	...	230	169	210	179	788	217	198	199	159	773	447	338
Females	...	182	206	212	173	773	221	196	192	197	806	403	370
Total	...	412	375	422	352	1561	438	394	391	356	1579	850	708
Rate	...	42.0	38.2	43.0	35.9	39.8	35.8	32.2	32.0	29.1	32.3	38.7	32.2
DEATHS													
Males	...	133	101	168	111	513	122	90	123	116	451	255	227
Females	...	121	95	128	94	438	116	81	128	118	443	237	212
Total	...	254	196	296	205	951	238	171	251	234	894	492	439
Rate	...	25.9	19.9	30.1	20.9	24.2	19.4	14.0	20.5	19.1	18.3	22.4	20.0
60 years and upwards	...	62	54	26	41	183	62	41	53	54	210	124	95
Under 1 year	...	73	52	161	68	354	62	44	114	60	280	135	128
1—5 years	...	30	22	47	25	124	30	19	25	34	108	60	59
Zymotics	...	20	22	99	21	162	45	22	75	26	168	65	47
Rate	...	2.0	2.2	10.1	2.1	4.1	3.6	1.8	6.1	2.1	3.4	2.9	2.1
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	2	4	5	...	11	2	6	...	...	8	4	...
Scarlet Fever	...	1	2	2	...	5	6	2	...	5	15	7	...
Whooping Cough	...	...	1	1	1	3	2	...	4	...	6	2	1
Diphtheria	...	5	3	7	3	18	14	2	4	5	25	19	8
Typhoid Fever	...	2	4	3	4	13	1	3	1	2	7	3	6
Influenza	...	6	1	...	1	8	17	6	2	2	27	23	2
Diarrhoea	...	1	5	81	11	98	...	3	62	11	76	1	143
Phthisis	...	14	13	12	13	52	13	11	14	15	53	27	28
Respiratory Diseases	...	67	36	21	45	169	45	32	25	48	150	112	46
Uncertified	...	5	2	4	2	13	...	1	1	5	7	5	7
Inquests	...	20	17	12	19	68	16	7	9	17	49	36	36
Deaths in Public Institutions													
in the													
East Sub-District.													
						Hospital							
						Workhouse							
						From Outside the Borough							
						From the West Sub-District							
						No Home							
						47	48	36	46	46	177	47	46
						53	38	40	44	44	175	53	44
						38	30	37	40	40	145	38	40
						15	21	13	18	18	67	15	18
						5	4	9	.6	.6	24	5	.6





TABLE No. 6.

*DEATHS in the Sub-Districts during the year 1898, classified according to  
Ages and Diseases.*

	EAST SUB-DISTRICT.							WEST SUB-DISTRICT.						
	AGES.						TOTALS	AGES.						TOTALS
	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards		0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	
I—ZYMOTIC DISEASES ...	85	46	14	11	6	..	162	70	50	20	14	7	7	168
III—DIETIC DISEASES ...	...	...	...	3	...	...	3	..	...	...	2	...	...	2
IV—CONSTITUTIONAL DISEASES...	22	14	20	60	10	4	130	28	11	31	68	9	3	150
V—DEVELOPMENTAL DISEASES...	38	...	...	...	22	33	93	33	..	...	...	13	43	89
VI—LOCAL DISEASES ...	146	57	33	124	83	17	460	99	44	22	123	94	25	407
VII—VIOLENCE ...	1	6	7	10	3	...	27	1	2	4	7	2	2	18
VIII—ILL-DEFINED CAUSES	62	1	...	8	3	2	76	49	1	1	4	4	1	60
TOTALS	354	124	74	216	127	56	951	280	108	78	218	129	81	894
I—Zymotic Diseases.														
1—MIASMATIC.														
Measles ...	2	9	..	..	...	...	11	3	4	1	..	...	...	8
Scarlet Fever ...	..	5	..	...	...	...	5	..	11	4	...	...	...	15
Whooping Cough ...	2	1	...	...	...	...	3	5	1	..	..	...	...	6
Diphtheria ...	2	8	8	..	...	...	18	..	20	5	...	...	...	25
Typhoid Fever ...	...	1	5	7	...	...	13	...	1	3	3	...	...	7
Influenza ...	...	1	1	3	3	...	8	1	...	4	10	7	5	27
2—DIARRHOEAL.														
Diarrhoea ...	74	21	...	...	3	...	98	61	13	..	...	...	2	76
5—VENEREAL.														
Syphilis ...	3	...	...	...	...	...	3	...	...	1	...	..	...	1
6—SEPTIC DISEASES.														
Erysipelas ...	2	...	..	...	...	...	2	...	...	1	..	...	...	1
Puerperal Fever ...	...	...	...	1	...	...	1	...	...	1	1	...	...	2
III—Dietic Diseases.														
Chronic Alcoholism ...	...	...	...	1	...	...	1	...	...	...	1	...	...	1
Delirium Tremens ...	...	...	...	2	...	...	2	...	..	...	1	...	...	1
IV—Constitutional Diseases.														
Rheumatic Fever ...	...	...	1	1	1	..	3	..	..	1	2	...	...	3
Rheumatism ...	...	...	...	...	..	1	1	...	..	...	..	...	..	...
Gout ...	...	...	...	...	...	...	...	...	...	...	..	1	..	1
Rickets ...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Malignant Disease ...	..	...	...	15	8	2	25	..	..	...	23	7	3	33
Tabes Mesenterica ...	6	3	1	1	..	..	11	4	3	4	1	...	...	12
Tubercular Meningitis ...	2	6	3	1	...	...	12	4	3	1	...	...	...	8
Phthisis ...	...	1	13	38	...	...	52	1	..	17	35	...	...	53
Other Tuberculoses ...	3	4	2	1	...	...	10	3	3	6	3	...	...	15
Purpura ...	...	...	...	..	...	...	..	...	..	...	...	1	...	1
Anæmia ...	...	...	...	1	..	...	1	..	..	..	2	...	..	2
Diabetes ...	...	...	...	2	1	1	4	...	..	2	2	..	...	4
Others ...	11	...	...	...	...	...	11	16	1	..	...	...	...	17

TABLE No. 6—Continued.

	EAST SUB-DISTRICT.							WEST SUB-DISTRICT.						
	AGES.						TOTALS	AGES.						TOTALS
	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards		0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	
<b>V—Developmental Diseases</b>														
Premature Birth ... ..	35	...	...	...	...	...	35	27	..	..	...	..	..	27
Atelectasis .. .. .	3	...	...	...	...	..	3	4	...	...	...	..	...	4
Congenital Malformation ..	...	...	...	...	...	...	..	2	...	...	...	..	...	2
Old Age ... .. .	...	...	...	..	22	33	55	...	...	..	..	13	43	56
<b>VI—Local Diseases</b>														
1—NERVOUS SYSTEM.														
Meningitis ... .. .	4	6	1	2	..	...	13	4	3	2	1	...	...	10
Apoplexy ... .. .	1	..	2	8	15	5	31	...	..	..	11	17	4	32
Epilepsy ... .. .	...	...	4	...	..	...	4	...	...	1	2	1	..	4
Convulsions ... .. .	35	1	...	...	...	...	36	17	3	1	..	1	..	22
Diseases of Spinal Cord ...	..	..	1	2	1	...	4	...	..	..	5	2	...	7
Others ... .. .	...	...	...	5	2	..	7	..	...	2	4	3	1	10
2—ORGANS OF SPECIAL SENSE.														
Otitis ... .. .	..	...	1	..	..	..	2	...	...	1	..	...	..	1
3—CIRCULATORY SYSTEM.														
Diseases of Heart ... ..	...	...	4	26	10	..	40	...	..	3	30	18	3	54
Aneurism ... .. .	...	...	...	...	..	...	...	...	..	...	...	1	..	1
Others ... .. .	...	...	...	..	1	...	1	..	..	...	...	...	...	...
4—RESPIRATORY SYSTEM.														
Laryngitis ... .. .	1	2	..	..	...	...	3	2	1	...	...	..	..	3
Asthma ... .. .	..	..	..	2	1	..	3	..	..	...	1	1	..	2
Bronchitis ... .. .	19	12	2	18	30	8	89	16	8	...	14	26	11	75
Pneumonia ... .. .	20	16	5	21	7	1	70	20	15	1	15	7	3	61
Pleurisy ... .. .	..	..	...	3	...	...	3	1	...	1	2	1	...	5
Others ... .. .	..	..	...	...	1	..	1	1	1	...	1	...	1	4
5—DIGESTIVE SYSTEM.														
Dentition ... .. .	7	3	..	..	..	..	10	3	...	...	...	..	...	3
Sore Throat ... .. .	..	2	..	1	..	...	3	...	..	1	..	..	..	1
Diseases of Stomach ... ..	1	..	2	2	1	..	6	3	1	1	4	2	..	11
Enteritis ... .. .	55	12	2	3	1	1	74	24	11	1	2	...	..	38
Obstructive Diseases of Intestines	..	..	1	2	3	..	6	1	...	..	...	3	...	4
Peritonitis ... .. .	...	...	2	1	..	..	3	...	..	1	3	1	...	5
Cirrhosis of Liver .. ..	...	...	..	5	3	...	8	...	...	..	9	1	..	10
Other Diseases of Liver ...	2	...	1	1	1	...	5	2	...	..	1	5	...	8
Others ... .. .	..	...	...	..	2	..	2	2	...	..	1	..	..	3
6—LYMPHATIC SYSTEM.														
Adenitis ... .. .	...	...	...	..	..	...	..	..	...	...	2	...	...	2
7—GLAND-LIKE ORGANS OF UNCERTAIN USE.														
Bronchocele ... .. .	...	...	..	...	...	...	...	...	...	...	1	..	..	1



TABLE No. 6—Continued.

		EAST SUB-DISTRICT.							WEST SUB-DISTRICT.						
		AGES.						TOTALS	AGES						TOTALS
		0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards		0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	
8—URINARY SYSTEM.															
Nephritis ... ..	...	...	2	...	9	2	...	13	...	...	2	10	3	...	15
Bladder or Prostate ... ..	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2
Others ... ..	...	...	...	...	2	...	...	2	...	...	...	1	...	...	1
9—REPRODUCTIVE SYSTEM															
A—Organs of Generation.															
Female ... ..	...	...	...	...	1	1	...	2	...	...	...	...	...	...	...
B—Parturition.															
Abortion ... ..	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...
Puerperal Convulsions ... ..	...	...	...	...	...	...	...	...	...	...	2	1	...	...	3
Flooding ... ..	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Others ... ..	...	...	...	3	3	...	...	6	...	...	...	...	...	...	...
10—BONES AND JOINTS.															
Caries, Necrosis ... ..	...	...	1	...	3	...	...	4	...	...	1	...	...	...	1
Arthritis ... ..	...	1	...	1	...	...	...	2	...	...	...	1	...	...	1
11—INTEGUMENTARY SYSTEM.															
Cellulitis ... ..	...	...	...	...	...	...	1	1	...	...	1	...	...	...	1
Others ... ..	...	...	...	...	1	1	1	3	3	1	...	...	...	2	6
VII—Violence.															
1—ACCIDENT OR NEGLIGENCE.															
Fractures and Contusions ... ..	...	...	2	4	3	...	...	9	...	...	2	2	1	1	6
Burn, Scald ... ..	...	...	3	1	2	1	...	7	...	2	1	1	...	...	4
Poison ... ..	...	...	...	...	1	1	...	2	...	...	...	...	1	...	1
Drowning ... ..	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...
Suffocation ... ..	...	1	...	...	2	...	...	3	...	...	...	...	...	...	...
2—HOMICIDE.															
Murder ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
3—SUICIDE.															
Cut, Stab ... ..	...	...	...	...	...	...	...	...	...	...	1	2	...	...	3
Poison ... ..	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Hanging ... ..	...	...	...	...	2	1	...	3	...	...	...	1	...	1	2
Otherwise ... ..	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
VIII—Ill-Defined Causes.															
Debility, Atrophy, Inanition ... ..	...	55	...	...	...	...	...	55	48	...	...	1	...	...	49
Mortification ... ..	...	...	...	...	...	2	1	3	...	...	...	1	2	...	3
Tumour ... ..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Abscess ... ..	...	...	1	...	2	...	...	3	...	...	...	1	...	...	1
Hæmorrhage ... ..	...	...	...	...	2	...	...	2	...	...	...	...	1	...	1
Causes not Specified ... ..	...	7	...	...	4	1	1	13	1	1	1	1	...	1	5





TABLE NO. 7.

TABLE OF DEATHS during the Year 1898 in the Urban Sanitary District of WOLVERHAMPTON; classified according to DISEASES, AGES, AND LOCALITIES, and the proportion of Deaths which occurred in Public Institutions.

MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.										MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.														
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	2	3	Enteric or Typhoid FEVERS	11	12	Whooping Cough	Diarrhoea and Dysentery	Rheumatic Fever	Phthisis	Bronchitis, Pneumonia, & Pleurisy	Heart Disease	Influenza	Injuries	20	21	Total
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 60	60 and up- wards	Under 5 yrs 5 & upwards	Scarlatina	Diphtheria		Erysipelas	Measles.											
East Sub-District	951	354	124	31	48	216	183	Under 5 yrs 5 & upwards	5 ...	10 8	1 12	2	11 ...	3 ...	95 3	...	1 51	67 95	...	1 7	7 20	275 233	478 478	
West Sub-District	894	280	108	34	44	218	210	Under 5 yrs 5 & upwards	11 4	20 5	1 6	1	7 1	6 ...	74 2	3	1 52	60 81	...	1 26	3 15	204 254	388 506	
TOTAL IN BOROUGH	1845	634	232	65	87	434	393	Under 5 yrs 5 & upwards	16 4	30 13	2 18	2 1	18 1	9 ...	169 5	6	2 103	127 176	...	2 33	10 35	479 487	866 979	
General Hospital	177	3	19	29	28	88	15	Under 5 yrs 5 & upwards	...	4 4	...	...	...	...	...	...	...	1 13	...	8 35	9 73	22 155		
Workhouse	175	17	13	1	8	44	92	Under 5 yrs 5 & upwards	...	...	...	...	1 ...	...	2 ..	...	...	4 41	...	...	...	28 79	30 145	
From outside the Borough	145	3	13	17	17	47	48	Under 5 yrs 5 & upwards	...	...	...	...	1 ...	...	..	...	3 3	3 20	...	4 22	8 64	16 129		
Deaths in Institutions in the East Sub-District.	67	1	6	3	9	26	22	Under 5 yrs 5 & upwards	...	2 1	...	...	...	...	...	...	5	...	...	...	...	5 38	7 60	





TABLE No. 8.

*Deaths and Death Rates for the past Twenty-six years.*

Year.	EAST SUB-DISTRICT.				WEST SUB-DISTRICT.				BOROUGH.				Estimated Populations.		
	Total.	Rate.	Zymotic	Rate.	Total.	Rate.	Zymotic	Rate.	Total.	Rate.	Zymotic	Rate.	East.	West.	Borough.
1873	1,125	29.7	...	...	631	19.8	...	...	1,756	25.1	...	...	38,010	31,841	69,906
1874	1,048	27.6	...	...	627	19.3	...	...	1,675	23.6	...	...	38,087	32,487	70,636
1875	1,155	30.3	...	...	640	19.3	...	...	1,795	25.2	...	...	38,163	33,140	71,373
*1876	1,099	28.2	..	...	655	19.0	...	...	1,754	25.9	...	...	38,241	33,806	72,118
1877	1,157	30.2	...	...	611	17.7	...	...	1,768	24.3	...	...	38,318	34,485	72,871
1878	1,081	28.2	...	...	644	18.3	...	...	1,725	23.5	..	...	38,396	35,178	73,632
1879	1,093	28.5	...	...	608	17.0	...	...	1,701	22.9	...	...	38,474	35,884	74,402
1880	960	24.9	...	...	629	17.2	...	...	1,589	21.2	...	...	38,552	36,606	75,178
*1881	998	25.4	..	...	650	17.1	...	...	1,648	21.3	...	..	38,620	37,305	75,932
882	1,056	27.4	...	...	657	7.3	...	..	1,713	22.4	...	...	38,663	37,909	76,596
1883	1,042	27.0	..	...	601	15.6	...	...	1,643	21.3	...	...	38,706	38,552	77,266
884	1,158	29.9	222	5.7	699	17.9	115	2.9	1,857	23.9	337	4.3	38,748	39,146	77,942
	981	25.4			753	19.3			1,731	22.3					
*1885	1,012	25.6	102	2.5	658	16.2	74	1.8	1,670	20.9	176	2.2	38,791	39,779	78,624
	844	21.4			720	17.8			1,564	19.5					
1886	1,125	29.0	182	4.7	697	17.3	156	3.8	1,822	23.0	338	4.2	38,834	40,423	79,311
	955	24.6			746	18.5			1,701	21.5					
1887	1,133	29.2	122	3.1	659	16.1	102	2.4	1,792	22.4	224	2.8	38,876	41,077	80,005
	944	24.3			720	17.5			1,664	20.8					
1888	1,005	25.8	95	2.4	707	17.0	121	2.9	1,712	21.2	216	2.6	38,919	41,741	80,705
	827	21.3			768	18.5			1,595	19.8					
1889	1,065	27.4	104	2.6	674	15.9	102	2.4	1,739	21.4	206	2.5	38,962	42,417	81,411
	883	22.7			737	17.4			1,620	19.9					
*1890	1,83	29.8	98	2.4	725	16.5	80	1.8	1,908	22.8	178	2.1	39,005	43,103	82,124
	977	24.6			795	18.1			1,772	21.2					
1891	1,214	31.1	120	3.0	822	18.8	122	2.7	2,036	24.6	242	2.9	39,048	43,800	82,842
	1,026	26.3			888	20.3			1,914	23.1					
1892	1,117	28.6	125	3.2	724	16.3	96	2.1	1,841	22.1	210	2.6	39,091	44,509	83,567
	935	24.6			781	17.6			1,716	20.6					
1893	1,260	32.3	153	3.9	730	16.1	129	2.8	1,990	23.6	282	3.3	39,134	45,229	84,298
	1,040	26.6			813	18.0			1,853	22.0					
1894	1,175	30.0	193	4.9	668	14.5	121	2.6	1,843	21.7	314	3.7	39,177	45,961	85,036
	911	24.9			744	16.2			1,719	20.2					
1895	1,335	34.1	202	5.1	872	18.7	235	5.0	2,207	25.8	437	5.1	39,220	46,706	85,781
	1,106	28.2			963	20.6			2,069	24.2					
*1896	1,088	27.2	166	4.1	773	16.0	146	3.0	1,861	21.1	312	3.5	39,263	47,462	86,530
	899	22.5			841	17.4			1,740	19.7					
1897	1,234	31.5	88	4.7	793	16.4	214	4.4	2,027	23.3	402	4.6	39,306	48,229	87,287
	1,022	26.0			878	18.2			1,900	21.8					
8	1,163	27.6	162	4.1	827	16.9	168	3.4	1,990	22.6	330	3.7	39,350	49,010	88,051
	951	24.2			894	18.3			1,845	21.0					

\* These years contain 53 weeks.

For explanation, see remarks at the end of the text.



TABLE No. 9.—Eleven Years' Annual Deaths, &c.

	1888	1889	*1890	1891	1892	1893	1894	1895	*1896	1897	1898	A
Small Pox ...	—	—	—	—	—	1	5	—	—	—	—	0·6
Measles ...	39	40	32	25	41	21	73	40	8	49	19	36·8
Scarlet Fever ...	17	6	13	14	3	25	55	34	21	24	20	21·2
Whooping Cough ...	58	48	27	26	80	4	28	53	28	39	9	39·1
Diphtheria ...	10	7	4	5	4	5	33	84	55	58	43	26·5
Typhoid Fever ...	11	9	9	15	16	23	17	18	37	21	20	17·6
Diarrhoea... ..	60	84	68	105	55	161	62	135	131	188	196	104·9
Phthisis and Respiratory ...	560	485	673	668	582	560	520	553	450	427	424	547·8
60 years and upwards ...	406	406	452	491	400	445	389	468	402	364	393	422·3
Under one year ...	445	479	477	531	482	600	484	659	561	671	634	538·9
1—5 years ...	237	299	250	287	275	212	310	353	220	308	232	275·1
Under 1 year, per 1,000 births...	166	179	174	188	171	206	167	217	185	219	202	187·2
Total Deaths ...	1595	1620	1772	1914	1716	1853	1719	2069	1740	1900	1845	1789·8
Rate per 1,000 ...	19·8	19·9	21·2	23·1	20·6	22·0	20·2	24·2	19·7	21·8	21·0	21·25
Zymotics ...	216	206	178	242	220	282	314	437	312	402	330	280·9
Rate per 1,000 ...	2·6	2·5	2·1	2·9	2·6	3·3	3·7	5·1	3·5	4·6	3·7	3·29
Births ...	2674	2666	2735	2820	2805	2902	2889	3027	3023	3054	3140	2859·5
Rate per 1,000 ...	33·2	32·8	32·8	34·1	33·6	34·5	34·0	35·4	34·3	35·1	35·7	33·98

\* These years contain 53 weeks.

A—Annual averages for the ten years preceding 1898.





TABLE No. 9a.—Eleven Years' Quarterly Deaths.

	1888.				1889.				1890.				1891.				1892.				1893.				1894.				1895.				1896.				1897.				1898.			
Quarters ending	31/3	30/6	29/9	29/12	30/3	29/6	28/9	28/12	29/3	28/6	27/9	31/12*	4/4	4/7	3/10	2/1	2/4	2/7	1/10	31/12	1/4	1/7	30/9	30/12	31/3	30/6	29/9	29/12	30/3	29/6	28/9	28/12	28/3	27/6	26/9	2/1*	3/4	3/7	2/10	1/1	2/4	2/7	1/10	31/12
Small Pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles ...	9	6	5	19	10	11	11	8	3	10	5	14	5	—	—	20	21	16	3	1	6	—	5	10	46	27	—	—	—	—	7	33	6	—	1	1	3	11	16	19	4	10	5	—
Scarlet Fever...	8	4	4	1	2	—	1	3	4	2	3	4	2	2	2	8	1	—	—	2	1	1	6	17	7	19	19	10	17	2	8	7	6	1	7	7	4	6	11	3	7	4	4	5
Whooping Cgh.	20	14	11	4	4	14	6	24	17	8	—	2	—	—	5	21	47	27	3	3	1	—	1	2	5	10	11	2	8	12	14	19	2	13	8	5	13	7	13	6	2	1	5	1
Diphtheria ...	4	4	1	1	—	2	2	3	3	—	—	1	1	2	1	1	—	3	1	—	—	1	1	3	5	8	10	10	19	24	14	27	19	15	9	12	11	10	11	26	19	5	11	8
Typhoid Fever.	2	5	2	2	1	2	4	2	2	3	1	3	5	2	5	3	1	7	5	3	3	4	9	7	—	2	6	9	3	—	5	10	12	9	11	5	4	1	7	9	3	7	4	6
Diarrhoea ...	4	7	30	19	3	8	56	17	7	3	42	16	5	7	66	27	7	4	31	13	3	11	140	7	4	1	44	13	2	1	113	19	10	7	101	13	1	7	165	15	23	8	143	22
Phthisis and } Respiratory }	184	137	95	144	165	116	76	128	248	139	109	177	177	204	84	203	241	129	84	128	156	136	98	170	154	143	91	132	211	138	89	115	128	108	63	151	141	80	68	138	139	92	72	121
60 yrs. & upwd.	127	98	80	101	130	84	87	105	144	91	80	137	137	168	79	107	143	93	69	95	100	118	91	136	102	114	82	91	194	111	83	80	101	94	76	131	119	84	78	83	124	95	79	95
Under 1 year...	118	103	113	111	103	109	138	129	116	79	147	135	93	120	159	159	143	107	120	112	127	99	232	142	115	115	129	125	138	113	260	148	107	102	188	164	127	99	316	129	135	96	275	128
1—5 years ...	73	64	37	64	67	71	74	87	83	57	43	67	47	54	49	136	123	81	40	31	24	34	71	83	96	91	68	55	79	65	89	120	62	46	52	60	48	59	112	89	60	41	72	59
Total Deaths...	478	395	335	387	433	371	386	423	545	365	392	470	417	536	400	561	587	415	340	374	403	389	535	526	460	473	394	392	599	439	556	475	418	374	451	497	465	367	626	442	492	367	547	439
Rate per 1,000.	23.7	19.6	16.6	19.2	21.3	18.6	19.0	20.8	26.6	17.8	19.1	21.3	20.2	25.9	19.3	27.1	28.1	19.9	16.3	17.9	19.1	18.5	25.4	25.0	21.7	22.3	18.5	18.5	28.0	20.5	26.0	22.2	19.3	17.3	20.9	21.4	21.3	16.8	28.7	20.3	22.4	16.7	24.9	20.0
Zymotics ...	61	45	56	54	22	42	82	60	44	30	58	46	24	41	88	89	92	59	45	24	19	22	169	72	81	86	98	49	79	69	174	115	60	53	141	58	46	49	224	83	65	44	174	47
Rate per 1,000.	3.0	2.2	2.7	2.6	1.0	2.0	4.0	2.9	2.1	1.4	2.8	2.0	1.1	1.9	4.2	4.3	4.4	2.8	2.1	1.1	0.9	1.0	8.0	3.4	3.8	4.0	4.6	2.3	3.6	3.2	8.1	5.3	2.7	2.4	6.5	2.4	2.1	2.2	10.3	3.8	2.9	2.0	7.9	2.1
Estimated Population }	80,705				81,411				82,124				82,842				83,567				84,298				85,036				85,781				86,530				87,287				88,051			

\* These Quarters contain 14 weeks.





TABLE No. 10.

DEATH-RATES, ETC., IN THE 33 GREAT TOWNS IN 1898.

	Population estimated to middle of 1898	Cor- rected Death- rate.	RECORDED DEATH RATES.							Deaths under 1,000 Births.
			Principal Diseases.	Measles.	Scarlet Fever.	Diph- theria.	Whoop- ing Cough.	Fever.	Diarr- hea.	
ENGLAND AND WALES	..	17.58								
ENGLAND AND WALES, less 33 TOWNS	..	16.52								
33 TOWNS	11,218,378	20.58	2.85	0.56	0.14	0.31	0.42	0.20	1.22	178
LONDON	4,504,766	19.91	2.78	0.68	0.13	0.39	0.48	0.13	0.97	167
WEST HAM	286,654	16.62	2.68	0.32	0.08	0.63	0.42	0.25	0.98	170
CROYDON	124,421	14.48	1.99	0.27	0.07	0.14	0.28	0.09	1.14	150
BRIGHTON	122,310	17.10	2.36	0.67	0.06	0.17	0.17	0.15	1.14	181
PORTSMOUTH	186,618	16.67	2.16	0.37	0.17	0.30	0.23	0.23	0.86	156
PLYMOUTH	99,136	18.99	2.15	0.71	0.04	0.11	0.28	0.06	0.95	170
BRISTOL	316,900	17.85	2.69	0.97	0.04	0.14	0.36	0.08	1.10	164
CARDIFF	177,770	16.54	2.24	0.28	0.05	0.73	0.24	0.10	0.84	158
SWANSEA	102,001	20.29	3.21	0.87	0.11	1.22	0.39	0.13	0.49	184
<b>WOLVERHAMPTON</b>	<b>88,051</b>	<b>22.26</b>	<b>3.19</b>	<b>0.22</b>	<b>0.26</b>	<b>0.43</b>	<b>0.10</b>	<b>0.23</b>	<b>1.95</b>	<b>200</b>
BIRMINGHAM	510,343	22.10	2.78	0.36	0.09	0.26	0.49	0.22	1.36	191
NORWICH	111,699	18.16	3.26	0.67	0.21	0.13	0.33	0.40	1.52	192
LEICESTER	208,662	18.38	3.35	1.03	0.21	0.30	0.09	0.14	1.58	191
NOTTINGHAM	236,137	19.00	2.37	0.44	0.14	0.10	0.25	0.24	1.20	178
DERBY	104,834	18.55	2.26	0.51	0.19	0.09	0.27	0.27	0.93	169
BIRKENHEAD	113,189	19.17	2.53	0.27	0.28	0.43	0.07	0.34	1.14	186
LIVERPOOL	633,645	26.33	3.22	0.44	0.23	0.23	0.52	0.26	1.54	184
BOLTON	122,495	21.96	2.93	0.25	0.19	0.07	0.37	0.31	1.74	168
MANCHESTER	539,079	24.80	3.11	0.50	0.12	0.10	0.32	0.23	1.84	197
SALFORD	215,702	25.52	4.03	0.46	0.29	0.15	0.60	0.37	2.16	212
OLDHAM	148,288	20.13	2.15	0.57	0.16	0.07	0.44	0.15	0.76	175
BURNLEY	109,546	18.72	2.04	0.07	0.05	0.27	0.06	0.25	1.34	195
BLACKBURN	133,228	20.72	2.57	0.38	0.12	0.23	0.04	0.24	1.56	206
PRESTON	116,356	21.27	3.07	0.02	0.03	0.07	0.53	0.37	2.05	225
HUDDERSFIELD	102,454	18.51	1.61	0.31	0.10	0.13	0.11	0.10	0.86	153
HALIFAX	96,729	19.89	2.15	0.73	0.15	0.08	0.36	0.19	0.64	163
BRADFORD	233,737	20.14	2.12	0.45	0.05	0.07	0.29	0.21	1.05	185
LEEDS	416,618	21.29	3.12	0.46	0.29	0.54	0.39	0.22	1.22	182
SHEFFIELD	356,478	22.21	3.82	0.49	0.16	0.26	0.62	0.40	1.89	195
HULL	229,887	19.79	2.99	0.40	0.12	0.07	0.30	0.25	1.85	182
SUNDERLAND	143,849	23.75	3.69	0.59	0.22	0.06	0.47	0.48	1.86	202
GATESHEAD	103,775	22.14	3.10	0.49	0.18	0.10	0.64	0.17	1.49	208
NEWCASTLE	223,021	23.33	2.84	0.57	0.11	0.13	0.62	0.30	1.10	190



## TABLE A.

### SUMMARY OF ROUTINE WORK.

Nuisances reported by Sanitary Inspectors ...	...	...	4,098		
Alleged Nuisances reported at the Office by residents	...	...	363		
Preliminary Notices served for the Abatement of Nuisances			2,987		
Legal Notices	ditto	ditto	...	1,088	
Inspections of Premises after service of Notices	...	...	8,844		
Number of Infectious Cases of Sickness enquired into	...	...	868		
Houses disinfected	...	...	...	...	296
Articles disinfected in Steam Disinfector	...	...	...	5,877	
Reports made to the Borough Surveyor of Dangerous Buildings, &c.	...	...	...	...	326
Reports made to the Waterworks Engineer of Waste of Water	...	...	...	...	239

## TABLE B.

### SPECIAL INSPECTIONS.

Number of visits paid to Slaughterhouses		...	...	...	1414	
Ditto	ditto	Bakehouses	...	...	...	838
Ditto	ditto	Workshops	...	...	...	1,224
Ditto	ditto	Dairies or Milkshops	...	...	...	827
Ditto	ditto	Cowsheds	...	...	...	109
						<hr/>
Total		...	...	...	...	4,412



**TABLE C.**

UNWHOLESOME FOOD CONDEMNED AND DESTROYED.

16 Carcases, 1 Fore Quarter, 2 Heads, 4 sets of Lungs and Pieces of Mutton.	}	Weighing about		
10 Carcases, 7 Fore Quarters, 6 Hind Quarters and Pieces of Beef.				
6 Carcases of Pork.		Tons.	Cwt.	Qrs.
5 Carcases of Lamb.		3	13	1
2 Carcases of Veal.				
672 lbs. of Cod and Hake.				
174 lbs. of Haddock				
93 lbs. of Shrimps.				
2 Bags of Mussels.				
1 Box of Fish Roes.				
51 Rabbits.				
10 lbs. of Plums.				

**TABLE D.**

HOUSES CLOSED AS UNFIT FOR HABITATION.

Deficient Air Space	...	...	...	...	...	...	16
Damp, Dilapidated and Close	...	...	...	...	...	...	9
Dilapidated	...	...	...	...	...	...	4
Dilapidated and Close	...	...	...	...	...	...	5
Damp	...	...	...	...	...	...	3
Damp and Close	...	...	...	...	...	...	21
Damp and dilapidated	...	...	...	...	...	...	32
Total	...	...	...	...	...	...	<u>90</u>

## TABLE E.

### SUMMARY OF CIRCULARS AND NOTICES SERVED.

To pave or repair paving of yards, &c.	...	...	...	207
To repair and cleanse soft-water cisterns	...	...	...	34
To cleanse and limewash houses, premises, &c.	...	...	...	856
To provide or repair spouting	...	...	...	248
To repair closets, outbuildings, &c.	...	...	...	257
To provide or repair flushing cisterns to W.C.'s	...	...	...	30
To open and cleanse drains	...	...	...	449
To remove Poultry	...	...	...	167
„ „ Refuse	...	...	...	87
„ „ Manure	...	...	...	74
„ „ Pigs	...	...	...	34
„ „ Hogwash	...	...	...	29
„ „ Offensive water from cellars	...	...	...	29
To trap drains	...	...	...	107
To discontinue overcrowding	...	...	...	90
To repair houses	...	...	...	142
To provide ashtubs or repair ashpits	...	...	...	266
To provide a proper supply of wholesome water in lieu of contaminated well water	...	...	...	16
To take up and re-lay defective drainage	...	...	...	60
To drain stables, cellars, premises, &c., into the Main Sewer	...	...	...	60
To do away with catchpits	...	...	...	87
To drain sinks	...	...	...	234
To convert privies into water carriage system	...	...	...	101
„ „ pan closets „ „ „	...	...	...	58
To repair waste-water closets	...	...	...	8
To remove Bell and D traps and fix stoneware gullies	...	...	...	21
To reconstruct urinals	...	...	...	53
To fix wash-down closets in lieu of insanitary closets	...	...	...	27
To abate nuisance from smoke	...	...	...	7
To provide manure middens	...	...	...	11
Miscellaneous	...	...	...	299

